Sunshine Act Meetings

Federal Register
Vol. 57, No. 163
Friday, August 21, 1992

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL DEPOSIT INSURANCE CORPORATION

Notice of Agency Meeting

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that at 11:34 a.m. on Tuesday, August 18, 1992, the Board of Directors of the Federal Deposit Insurance Corporation met in closed session to consider the following:

Matters relating to probable failure of a certain insurance bank.

Recommendations concerning administrative enforcement proceedings.

Request for exemption from the cross-guaranty provisions of the Federal Deposit Insurance Act and issuance of notice of assessment of liability pursuant to those provisions.

In calling the meeting, the Board determined, on motion of Director C.C. Hope, Jr. (Appointive), seconded by Director T. Timothy Ryan, Jr. (Office of Thrift Supervision), and concurred in by Director Stephen R. Steinbrink (Acting Comptroller of the Currency) and Acting Chairman Andrew C. Hove, Jr., that Corporation business required its consideration of the matters on less than seven days' notice to the public; that no earlier notice of the meeting was practicable; that the public interest did not require consideration of the matters in a meeting open to public observation; and that the matters could be considered in a closed meeting by authority of subsections (c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B) of the "Government in the Sunshine Act" (5 U.S.C. 552b(c)(4), (c)(6), (c)(8), (c)(9)(A)(ii), and (c)(9)(B)).

The meeting was held in the Board Room of the FDIC Building located at 550–17th Street, N.W., Washington, D.C.

Dated: August 18, 1992.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Deputy Executive Secretary.

[FR Doc. 92–20142 Filed 8–19–92; 3:16 pm]

BILLING CODE 6714-01-M

FEDERAL MARITIME COMMISSION

TIME AND DATE: 10:00 a.m., August 26, 1992.

PLACE: 9th Floor Conference Room, Federal Maritime Commission, 800 North Capitol St., N.W., Washington, D.C. 20573–0001.

STATUS: Closed.

MATTER(S) TO BE CONSIDERED:

1. Agreement No 202–011375: Trans-Atlantic Agreement.

CONTACT PERSON FOR MORE INFORMATION: Joseph C. Polking, Secretary, (202) 523–5725.

Josehp C. Polking,

Secretary.

[FR Doc. 92–20192 Filed 8–19–92; 3:18 pm]

BILLING CODE 6730-01-M

FEDERAL TRADE COMMISSION

TIME AND DATE: 10:00 a.m., Wednesday, September 16, 1992.

PLACE: Room 432, Federal Trade Commission Building, 6th Street and Pennsylvania Avenue, NW., Washington, DC 20580.

STATUS: OPEN.

MATTER TO BE CONSIDERED: Consideration of possible amendments to the Mail-Order Merchandise TRR.

CONTACT PERSON FOR MORE INFORMATION: Bonnie Jansen, Office of Public Affairs: (202) 326–2178, Recorded Message: (202) 326–2711.

Donald S. Clark,

Secretary.

[FR Doc. 92–20200 Filed 8–19–92; 3:19 pm]

BILLING CODE 6750-01-M

Corrections

Federal Register
Vol. 57, No. 163
Friday, August 21, 1992

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF COMMERCE

International Trade Administration

[C-433-804, et al.]

Initiation of Countervailing Duty Investigations and Postponement of Preliminary Determinations: Certain Steel Products From Austria, Belgium, Brazil, France, Germany, Italy, Korea, Mexico, New Zealand, Spain, Sweden, Taiwan, and the United Kingdom

Correction

In notice document 92-17567 beginning on page 32970 in the issue of Friday, July 24, 1992, make the following corrections:

1. On page 32973, in the first column, in the last full paragraph, in the next to last line, after "7211.90.0000" insert "7212.40.1000".

2. On the same page, in the second column, in the last paragraph, in the fourth line from the end, after "7210.70.3000" insert "7210.90.9000".

BILLING CODE 1505-01-D

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER92-720-000, et al.]

Century Power Corp., et al. Electric Rate, Small Power Production, and Interlocking Directorate Filings

Correction

In notice document 92-17701 beginning on page 33335 in the issue of Tuesday, July 28, 1992, in the second column, under 4. Wisconsin Electric Power Co. "[Docket No. ER92-72-000]" should read "[Docket No. ER92-722-000]".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 131

[Docket No. 91P-0090/CP]

Evaporated Milk; Proposed Amendment of the Standard of Identity

Correction

1. In proposed rule document 92-17182 beginning on page 32470 in the issue of Wednesday, July 22, 1992, make the following corrections:

2. On page 32471, in the first column, in the fourteenth line, "or" should read "so".

3. On the same page, in the same column, in the first full paragraph, in the first line, "ADPT" should read "ADBI".

4. On page 32472, in the first column, in the first full paragraph, in the twelfth line, "in" should read "is".

5. On the same page, in the same column, in the same paragraph, in the thirteenth line, "identify" should read "identity".

6. On the same page, in the same column, in the second full paragraph, in the second line, insert "be" after "not".

7. On the same page, in the same column, in the same paragraph, in the fifth line, "identify" should read "identity".

BILLING CODE 1505-01-D

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[AZ-050-02-4212-14;AZA 25294]

Arizona: La Paz County Realty Action for the Noncompetitive Sale of Public Lands

Correction

In notice document 92-18205 appearing on page 34142, in the issue of Monday, August 3, 1992, make the following correction:

In the second column, under **DATES**, in the last line "April 30, 1992," should read "April 30, 1993,".

BILLING CODE 1505-01-D

DEPARTMENT OF VETERANS AFFAIRS

38 CFR Part 3

RIN 2900-AF84

Direct Service Connection (Post-Traumatic Stress Disorder)

Correction

In proposed rule document 92-18503 beginning on page 34536 in the issue of Wednesday, August 5, 1992, make the following correction:

§ 3.304 [Corrected]

On page 34537, in the first column, in § 3.304(f), in the fourth line, "eperienced" should read "experience".

BILLING CODE 1505-01-D

Federal Register

Friday
August 21, 1992

Part II

Department of Education

Intent To Repay to the Louisiana State Department of Education Funds Recovered as a Result of a Final Audit Determination; Notice

DEPARTMENT OF EDUCATION

Intent To Repay to the Louisiana State Department of Education Funds Recovered as a Result of a Final Audit Determination

AGENCY: Department of Education.

ACTION: Notice of intent to award grantback funds.

SUMMARY: Under section 456 of the General Education Provisions Act (GEPA), 20 U.S.C. 1234e (1982), the Secretary of Education intends to repay to the Louisiana State Department of Education, State Educational Agency (SEA), an amount equal to 75 percent of the principal amount of funds recovered by the U.S. Department of Education as a result of a final audit determination. This notice describes the SEA's plan for the use of the repaid funds and the terms and conditions under which the Secretary intends to make those funds available. The notice invites comments on the proposed grantback.

DATES: All comments must be received on or before September 21, 1992.

ADDRESSES: Comments concerning the grantback should be addressed to William D. Tyrrell, Sr., U.S. Department of Education, 400 Maryland Avenue SW., room 3611, Switzer Building, Washington, DC 20202–6132

FOR FURTHER INFORMATION CONTACT: William D. Tyrrell, Sr. Telephone: (202) 205–8825. Individuals who are hearing impaired may call the Federal Dual Party Relay Service at 1–800–877–8339 (in the Washington, DC, 202 area code, telephone 708–9300) between 8 a.m. and 7 p.m., Eastern time.

SUPPLEMENTARY INFORMATION:

A. Background

The Department has recovered $756,605 from the SEA for claims arising from the audit conducted by the Region VI Office of Inspector General covering fiscal years 1982 through 1985.

The claims involved the SEA's administration of the Assistance to States for Education of Children with Disabilities program, authorized under Part B of the Individuals with Disabilities Education Act, a program that addresses the special education needs of children with disabilities aged 3 through 21 in local educational agencies (LEA).

The August 11, 1987, final audit determination of the Assistant Secretary for Special Education and Rehabilitative Services found that the SEA was required to refund $912,678 to the Department because it did not use program funds appropriately during fiscal years 1982 through 1985. In particular, the SEA failed to design programs to benefit children with disabilities exclusively, used support service funds to fund a position that was not related to the needs of these children, displaced local funds, and failed to maintain appropriate records while funding projects that were not designed to meet the priority needs of children with disabilities. The SEA appealed the determination of the Assistant Secretary to the Education Appeal Board (EAB). On March 10, 1988, the U.S. Department of Education reduced the original claim by $156,073 to $756,605 after a determination was made that insufficient evidence was available to justify the disallowances in two specific areas of the audit. The EAB issued its decision in the matter on August 8, 1988, sustaining the determination of the Assistant Secretary and affirming the claim for return of $756,605 from the SEA. This decision became the final agency action of the U.S. Department of Education on October 18, 1988. The SEA appealed to the U.S. Court of Appeals for the Fifth Circuit. The Court of Appeals decided the case on August 8, 1989, in favor of the U.S. Department of Education *Louisiana State Board of Elementary and Secondary Education* v. *U.S. Department of Education*, No. 88–4802 (5th Cir. 1989). The SEA has submitted payment of the amount in full settlement of all claims arising from the audit.

B. Authority for Awarding a Grantback

Section 456(a) of GEPA, 20 U.S.C. 1234e(a), provides that whenever the Secretary has recovered funds following a final audit determination with respect to an applicable program, the Secretary may consider those funds to be additional funds available for the program and may arrange to repay to the SEA or LEA affected by that determination an amount not to exceed 75 percent of the recovered funds. The Secretary may enter into this "grantback" arrangement if the Secretary determines that the—

(a) Practices and procedures of the SEA or LEA that resulted in the audit determination have been corrected, and the SEA or LEA is, in all other respects, in compliance with the requirements of the applicable program;

(b) SEA has submitted to the Secretary a plan for the use of the funds to be awarded under the grantback arrangement that meets the requirements of the program and, to the extent possible, benefits the population that was affected by the failure to comply or by the misexpenditures that resulted in the audit exception; and

(c) Use of funds to be awarded under the grantback arrangement in accordance with the SEA's plan would serve to achieve the purposes of the program under which the funds were originally granted.

C. Plan for Use of Funds Awarded Under a Grantback Arrangement

Pursuant to section 456(a)(2) of GEPA, the SEA has applied for a grantback totaling $567,454, which is 75 percent of the principal amount of the recovered funds, and has submitted a plan for use of the grantback funds to meet the special education needs of children with disabilities. The State's plan is to purchase the technological resources to facilitate Louisiana's five-year plan to improve integrated educational services for students with disabilities. The purpose of the five-year plan is to—

(a) Provide increased integrated educational opportunities for students with low incidence and severe disabilities;

(b) Provide increased regular education opportunities for students with mild disabilities; and

(c) Increase and improve transition services.

The grantback funds will be used for—

(a) Completing a project, already underway, to provide assistive devices to children with low-incidence and severe disabilities who need equipment or materials, or both, to increase their ability to communicate and access additional educational opportunities in integrated settings;

(b) Providing technological and curriculum materials for students with mild and moderate disabilities to improve their ability to communicate and participate in additional educational opportunities in regular education settings; and

(c) Providing the technological equipment needed for training in the area of transition services. The purchase of the equipment and materials included in the grantback request will follow all State bid laws and requirements.

The SEA has established a series of Learning Resource Centers (LRCs) that provide materials and equipment to local parishes on a loan basis. These already established centers will be used to house and distribute the curriculum and materials which are reflected in the grantback budget. These technological resources, when used, will improve integrated educational services for students with disabilities. These technological resources will enhance transition services and increase the

educational opportunities for integrated education for children with disabilities.

D. The Secretary's Determinations

The Secretary has carefully reviewed the plan submitted by the SEA. Based upon that review, the Secretary has determined that the conditions under section 456(a) of GEPA have been met.

These determinations are based upon the best information available to the Secretary at the present time. If this information is not accurate or complete, the Secretary is not precluded from taking appropriate administrative action. In finding that the conditions of section 456(a) of GEPA have been met, the Secretary makes no determination concerning any pending audit recommendations or final audit determinations.

E. Notice of the Secretary's Intent to Enter Into a Grantback Arrangement

Section 456(d) of GEPA requires that, at least 30 days before entering into an arrangement to award funds under a grantback, the Secretary must publish in the **Federal Register** a notice of intent to do so, and the terms and conditions under which the payment will be made.

In accordance with section 456(d) of GEPA, notice is hereby given that the Secretary intends to make funds available to the Louisiana SEA under a grantback arrangement. The grantback award would be in the amount of $567,454, which is 75 percent—the maximum percentage authorized by statute—of the principal amount recovered as a result of the audit.

F. Terms and Conditions Under Which Payments Under a Grantback Arrangement Would Be Made

The SEA agrees to comply with the following terms and conditions under which payments under a grantback arrangement would be made:

(a) The funds awarded under the grantback must be spent in accordance with—

(1) All applicable statutory and regulatory requirements;

(2) The plan that the SEA submitted and any amendments to the plan that are approved in advance by the Secretary; and

(3) The budget that was submitted with the plan and any amendments to the budget that are approved in advance by the Secretary.

(b) All funds received under the grantback arrangement must be obligated by September 30, 1992, in accordance with section 456(c) of GEPA.

(c) The SEA will, not later than January 1, 1993, submit a report to the Secretary that—

(1) Indicates that the funds awarded under the grantback have been spent in accordance with the proposed plan and any amendments that have been approved in advance by the Secretary; and

(2) Describes the results and effectiveness of the project for which the funds were spent.

(d) Separate accounting records must be maintained documenting the expenditures of funds awarded under the grantback arrangement.

(e) Before funds will be repaid pursuant to this notice, the SEA must repay to the Department any debts that become overdue, or enter into a repayment agreement for those debts.

Dated: August 17, 1992.

(Catalog of Federal Domestic Assistance Number 84.027, Handicapped State Grants)

Lamar Alexander,

Secretary of Education.

[FR Doc. 92-19972 Filed 8-20-92; 8:45 am]

BILLING CODE 4000-01-M

federal register

Friday
August 21, 1992

Part III

Environmental Protection Agency

40 CFR Parts 156 and 170

Worker Protection Standard, Hazard Information, Hand Labor Tasks on Cut Flowers and Ferns Exception; Final Rule, and Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 156 and 170

[OPP-300164A; FRL-3774-6]

RIN 2070-AA49

Worker Protection Standard

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing final revisions to its regulations governing the protection of workers from agricultural pesticides. These revised regulations expand the scope of the standard to include not only workers performing hand labor operations in fields treated with pesticides, but employees in forests, nurseries, and greenhouses, and employees who handle (mix, load, apply, etc.) pesticides for use in these locations. The regulations expand requirements for warnings about applications, use of personal protective equipment, and restrictions on entry to treated areas, and add new provisions for decontamination, emergency assistance, contact with handlers of highly toxic pesticides, and pesticide safety training. Pesticide registrants are required to add appropriate labeling statements referencing these regulations and specifying application restrictions, restricted-entry intervals (REIs), personal protective equipment (PPE), and notification to workers of pesticide applications. EPA has determined that its present regulations are inadequate to protect agricultural workers and pesticide handlers who are occupationally exposed to pesticides. The revised regulations are intended to reduce the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers through implementation of appropriate exposure reduction measures.

EFFECTIVE DATE: This rule will become effective October 20, 1992.

ADDRESSES: Comments should be submitted in triplicate and addressed to the Document Control Officer (H7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. All comments should bear the document control number OPP-300164A and will be available for public inspection from 8:30 a.m. to 4 p.m., Monday through Friday, at the Office of Pesticides Program's Document Control Office, Rm. 1132, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA 22202.

FOR FURTHER INFORMATION CONTACT: By mail: James J. Boland, Acting Chief, Occupational Safety Branch (H7506C), Field Operations Division, Office of Prevention, Pesticides and Toxic Substances, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location and room number: Rm. 1114, CM #2, 1921 Jefferson Davis Highway, Arlington, VA, (703) 305-7666.

SUPPLEMENTARY INFORMATION: This **Federal Register** notice discusses the background and events leading to this final rule revising the Worker Protection Standard; summarizes the public's comments on the provisions of the proposed rule (53 FR 25970, July 8, 1988); provides EPA's response to comments and final determination with respect to provisions of the revised standard; discusses implementation of the revised standard by registrants, the Agency, the States, and pesticide users; and provides information on the applicable statutory and regulatory review requirements. More detailed discussion of the public comments and the Agency's response are found in the Response to Public Comments in the docket. The Agency is interested in receiving additional comments, data, and other evidence concerning both the general prohibition of routine hand labor tasks during a restricted-entry interval and the mechanism for granting exceptions to that prohibition. Written comments, data, or other evidence concerning these topics should be submitted on or before October 20, 1992. Upon review of these comments, EPA may modify this final rule's restrictions upon entering an area that remains under a restricted-entry interval or the process by which the exception requests are considered. As an aid to the reader, the following is an outline of the contents of this document:

I. Background

A. Legal Authority

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 135) was enacted in 1947. Since then, pesticide products have been subject to Federal regulation under FIFRA. Today, they are required to be registered with EPA.

In 1972, FIFRA was amended by the Federal Environmental Pesticide Control Act (7 U.S.C. 136). The amendments broadened Federal pesticide regulatory authority by making it "unlawful for any person to use any registered pesticide in a manner inconsistent with its labeling" (7 U.S.C. section 136j(a)(2)(G)), and they provided civil and criminal penalties for violations of FIFRA (7 U.S.C. 136l). The amendments also authorized EPA to provide regulations to carry out FIFRA (7 U.S.C. 136w(a)). These new or revised provisions augmented EPA's authority to protect humans and the environment from unreasonable adverse effects of pesticides.

During the congressional consideration of FIFRA amendments in 1972, it was emphasized that FIFRA was to be implemented by EPA to protect employees who might be exposed to pesticides or their residues. The legislative history of the 1972 amendments indicates an express intent of Congress that farmers, farmworkers, and others be afforded such protection under FIFRA. The Senate Committee on Agriculture and Forestry rejected the need to include a specific provision in FIFRA to protect farmworkers. However, the Committee found "protection of man and the environment" to be a broad term encompassing farmers, farmworkers, and others who come into contact with pesticides, and stated that:

> The Committee believes there can be no question. . .but. . .that the bill [The Federal Environmental Pesticide Control Act of 1972

(FEPCA)] requires the Administrator to require that the labeling and classification of pesticides be such as to protect farmers, farm workers, and others coming in contact with pesticides or pesticide residues. (S. Rep. No. 92-883, (Part II), 92nd Congress, 2nd Session at 43-46 (1972) (Agriculture and Forestry), U.S. Code Congressional and Administrative News 1972, p. 4063).

B. History of the Worker Protection Standard

In 1974, EPA promulgated the regulations found at 40 CFR part 170 pursuant to its authority under FIFRA (39 FR 16888; May 10, 1974). That part, entitled "Worker Protection Standards for Agricultural Pesticides," dealt only with the pesticide-related occupational safety and health of "farm workers performing hand labor operations in fields after ground (other than those incorporated into the soil), aerial, or other type of application of pesticides" (40 CFR 170.1). Part 170 consisted of four basic requirements: (1) A prohibition against spraying workers and other persons; (2) a general reentry interval for all agricultural pesticides prohibiting reentry into treated fields until the sprays had dried or dusts had settled and longer reentry intervals for 12 specific pesticides; (3) a requirement for protective clothing for any worker who had to reenter treated fields before the specific reentry period had expired; and (4) a requirement for "appropriate and timely" warnings. Soil-incorporated pesticides, mosquito abatement treatments and related public pest control programs, greenhouse treatments, livestock and other animal treatments, and treatments of golf courses and similar nonagricultural areas were exempted from coverage.

EPA's authority to promulgate such requirements, including reentry interval standards designed to limit workers' occupational exposure to pesticides and pesticide residues (such as those in part 170) is established, not only in the legislative history but in the courts. See, e.g., *Organized Migrants in Community Action v. Brennan (OMICA)* 520 F.2d 1161 (D.C. Cir. 1975) and *Public Citizen Health Research Group, et al. v. Auchter* 702 F.2d 1150 (D.C. Cir. 1983).

In OMICA the Court of Appeals stated: Our own analysis of the statute [FIFRA] and its legislative history confirms EPA's ample statutory authority to issue field reentry standards to protect farm workers. (520 F.2d at 1165) . . . Even before FEPCA's enactment, EPA and predecessor agencies construed the labeling provisions of FIFRA to require field reentry limitations for many pesticides. See 39 Fed. Reg. 16888 (1974). However, these were merely informational until FEPCA made them enforceable. See id. at 16889. It is clear from an examination of the explanatory statement accompanying EPA's proposed and final rules that these standards (part 170) were promulgated and implemented under the labeling authority given EPA by FEPCA. (520 F.2d at 1168).

In June 1980, EPA announced a Label Improvement Program (LIP) under which labels of pesticide products are upgraded, improved, or revised to meet current labeling standards. On March 29, 1983, EPA issued a Farm Worker Safety LIP (PR Notice 83–2) calling for certain information to be placed on labels of "all outdoor agricultural use products which are applied to crops whose culture requires hand labor." In effect, PR 83-2 implemented 40 CFR part 170, promulgated 9 years before. PR 83–2 did not include mixing, loading, flagging, or equipment operation because part 170 was limited to farmworkers engaged in hand labor. Greenhouse treatments and forestry uses were excluded for the same reason. PR 83–2 defined the term "hand labor tasks" to mean crop production activities such as harvesting, detasseling, thinning, weeding, topping, planting, sucker removal, summer pruning, moving irrigation equipment, and other tasks performed in the field by farmworkers who could have substantial contact with pesticide-treated surfaces such as plants and plant parts.

An Agency review of 40 CFR part 170, conducted in 1983, concluded that the regulations were inadequate to protect agricultural workers. The review revealed concerns about enforceability and coverage and cited continuing reports of worker poisonings. In 1984, EPA published an Advance Notice of Proposed Rulemaking that announced its decision to revise part 170 and solicited public comment (49 FR 32605; August 15, 1984). Most comments favored revising part 170, but they expressed wide differences in opinion about the revisions needed.

EPA subsequently initiated a process of public participation known as regulatory negotiation. An Advisory Committee consisting of 25 representatives of farmworker unions, health care providers, agricultural trade associations, commercial pesticide applicators, pesticide registrants, State health and agriculture agencies, EPA, and other Federal agencies was constituted under the Federal Advisory Committee Act (Pub. L. 92–463). Negotiations began in November 1985. In early 1986, after several meetings, the representatives of the farmworker unions ended their participation. As a result, regulatory negotiation consensus was not possible.

EPA issued a notice of proposed rulemaking (NPRM) in the July 8, 1988, **Federal Register**. The proposed revisions expanded the scope of part 170 to include all employees performing tasks related to the production of agricultural plants on farms, in forests, nurseries, and greenhouses, and handlers of pesticides intended for use on agricultural plants in these locations. The NPRM also expanded requirements for notification to workers about applications, use of personal protective equipment (PPE), and restrictions on entry to treated areas, and proposed to add new provisions for decontamination, emergency medical assistance, maintaining contact with handlers of highly toxic pesticides, cholinesterase monitoring, and training. EPA also proposed to promulgate labeling regulations to require statements pertaining to general worker protection, entry intervals, personal protective equipment, and posting of treated areas.

The proposed revisions were based on five major concerns. First, the Agency believed that data developed after 1974 on pesticide poisonings of workers revealed the inadequacies and shortcomings in the scope and requirements of part 170. Many of these data were placed into the record by EPA and other parties to this rulemaking. Second, the Agency stated that the enforcement experiences of EPA and the States over the years had led the Agency to conclude that a clearer exposition of liability and responsibility provisions would lead to improved worker protection. Third, the Agency had determined that since the reregistration program would not be completed for some pesticides for several years, measures were necessary to protect workers in the interim. Fourth, because EPA believed that protection should be provided to other workers, it proposed expanding coverage to workers not covered by the present part 170. Finally, the Agency noted the increased use of organophosphate and carbamate pesticides since 1974. These pesticides tend to be more acutely toxic to humans than pesticides commonly used in agriculture in the past.

During July and August of 1988, EPA held more than 15 public meetings, mostly in agricultural areas of the country, to explain the proposed rules and to answer questions (see 53 FR 25970; July 8, 1988). The major meetings were held in: Washington, DC; Casa Grande, AZ; Fresno, CA; Greeley, CO; Orlando, FL; Forest Park, GA; Caldwell, ID; Des Moines, IA; Augusta, ME; Hagerstown, MD; Salisbury, MD; Holyoke, MA; New Paltz, NY; Maumee, OH; McAllen, TX; and Yakima, WA.

In response to the notice of proposed rulemaking, the Agency received 380 comments totaling more than 2,000 pages.

After a careful review and analysis of the comments and data in the record, the Agency is promulgating this final rule revising 40 CFR part 170 (Worker Protection Standard) and adding part 156, subpart K (Labeling Requirements for Pesticides and Devices).

II. Organization and Summary of the Final Rule

A. Organization of the Final Rule

Many comments stressed that the proposal was confusing. EPA believes that some of the confusion stemmed from the format of the proposed revisions. The proposed revisions included requirements for workers at four different use sites and addressed many differing activities including hand-labor activities, non-hand-labor activities, early-entry activities, and handling activities.

EPA has changed the format of the final rule. The revisions to part 170 are now in the form of two separate, more self-contained standards—one for pesticide handlers and one for workers on all covered sites: Farms, forests, greenhouses, and nurseries. This organization will reduce confusion and will make it easier for employers and their employees to understand the requirements, to comply with the provisions, and to propose amendments if data so warrant in the future.

B. Summary of the Worker Protection Standard

The provisions in the revised Worker Protection Standard are directed toward the working conditions of two types of employees: those who handle agricultural pesticides (mix, load, apply, clean or repair equipment, act as flaggers, etc.) and those who perform tasks related to the cultivation and harvesting of plants on farms or in greenhouses, nurseries, or forests. There are three types of provisions intended to: (1) Eliminate or reduce exposure to pesticides; (2) mitigate exposures that occur; and (3) inform employees about the hazards of pesticides. A summary of these provisions is given here. Discussions of these provisions and summaries of the public's comments on these provisions are contained in Unit III of this preamble. More detailed discussion of the public's comments can be found in a document entitled "Summary of the Public Comments and the Agency's Response, Worker Protection Standard" in the docket.

1. *Provisions to eliminate or reduce pesticide exposures.* Exposure to pesticides can be reduced by excluding workers from areas treated with pesticides, prohibiting handlers from applying a pesticide in a way that will expose workers or other persons, and protecting handlers during handling activities. Hence, the final rule contains several provisions to achieve this purpose such as application restrictions, entry restrictions, use of personal protective equipment, and notification to workers of treated areas so they can avoid inadvertent exposures.

a. *Application restrictions.* Three types of restrictions apply during applications:

i. No pesticide may be applied in a manner that will cause it to contact any person except an appropriately trained and equipped handler.

ii. No person, except an appropriately trained and equipped handler, may be in an area or, in some cases, near an area being treated with pesticides.

iii. The employer must make sure that any handler who is handling a pesticide with a skull and crossbones symbol on the label is monitored visually or by voice at least every 2 hours. Handlers using fumigants in greenhouses must be in continuous visual or voice contact with another handler.

b. *Use of personal protective equipment (PPE).* Additional provisions to minimize exposure are directed toward the use of PPE. The appropriate PPE based on the product's acute toxicity by route of exposure (dermal, ocular, or respiratory) will be specified in the product labeling for the work activity (handling or early entry).

i. Persons handling the pesticide must wear the PPE specified for handlers on the labeling of the pesticide being used.

ii. Persons entering a treated area before the expiration of a restricted-entry interval (REI) who will contact anything that has been treated must wear PPE specified in the labeling for early entry.

iii. When PPE is required by the product labeling for the activity to be performed, the employer must: (1) Provide the PPE to each worker or pesticide handler; (2) clean and maintain the PPE correctly; (3) make sure that each handler or worker wears and uses the PPE correctly; (4) prevent workers or handlers from wearing home or taking home contaminated PPE; and (5) take action to prevent heat stress, if the work and the PPE might cause heat stress.

c. *Entry restrictions.* Access to pesticide-treated areas is limited after an application while the pesticide may still present a hazard. EPA's current practice is to set entry intervals (REIs) based on data collected and evaluated for this purpose, but many older pesticides in agricultural use today may not have been evaluated for entry hazards. The collection and evaluation of such data may take several years. The final rule establishes REIs for all pesticide products which are used in the production of agricultural plants and for which REIs have not been set according to current standards. Previously established entry intervals will be retained if they are based on entry data that meet Agency guidelines. Any other previously established entry interval is considered to be "interim" and will be retained only if it is longer than the REI established by part 170.

In general, a 48-hour REI is established for any product containing an active ingredient that is in toxicity category I (most acutely toxic category) because of dermal toxicity or skin or eye irritation. The REI is extended to 72 hours in arid areas if any such active ingredient is an organophosphate and the product is applied outdoors. A 24-hour REI is established for any product containing an active ingredient that is in toxicity category II (moderately toxic) because of dermal toxicity or skin or eye irritation. A 12-hour interval is established for all other products.

Workers are restricted from entering a pesticide-treated area for the REI specified on the product labeling. With narrow exceptions, the time a worker may be in areas under an REI is limited and other safety measures are required. The activities that may take place in an area under an REI are limited to tasks that do not require contact with treated surfaces, short-term tasks that do not require hand labor and tasks that may be necessary in an emergency to save a crop. In addition, affected persons or organizations may request that the Agency grant case-by-case exceptions to the entry restrictions if they believe their industries, crops, or crop practices would bear an unreasonable economic burden under such restrictions.

d. *Notification of applications.* To help workers avoid inadvertent exposures to pesticide-treated areas, the Agency is requiring employers to inform workers of where pesticides have been applied on the agricultural establishment. This notification may take one or more forms:

i. All agricultural employees who may come near a treated area must be notified, either orally or by posting treated areas with warning signs, of pesticide applications and areas under an REI on agricultural establishments.

ii. For selected pesticide products for which inadvertent early entry could be especially hazardous, treated areas must be posted with warning signs, and oral warnings must be given to workers.

iii. For outdoor uses, there are no notification requirements if workers will not be within 1/4 mile of the treated area during the application or before the expiration of the REI.

iv. Treated areas must be posted for all pesticide applications in greenhouses if workers will be in the greenhouse during the application or before the expiration of the REI.

2. *Provisions to mitigate exposure* — a. *Decontamination.* Employees handling pesticides must be provided an ample supply of water for washing splashed or spilled pesticides off themselves and for washing after the pesticide-handling activity is complete.

Workers entering treated areas where, within the last 30 days, a pesticide has been applied or an REI has been in effect, must be provided facilities for washing.

b. *Emergency assistance.* Although the Agency believes the precautions such as observing application restrictions and entry restrictions, using PPE, and notifying workers of applications will decrease the frequency of acute pesticide poisoning or injury incidents, medical emergencies involving agricultural workers and handlers may still arise. In such cases, prompt medical treatment is necessary to mitigate the extent of the injury or poisoning. Hence, the rule contains several duties related to emergency care:

i. The name and location of the nearest medical facility must be posted at a central location.

ii. If an agricultural worker or handler may have been poisoned or injured by a pesticide, the employer must make available transportation to a medical care facility.

iii. The employer must provide to the employee, or to medical personnel treating the employee, information about the pesticide(s) to which the worker or handler may have been exposed.

3. *Provisions to inform employees about pesticide hazards.* Since training and information are essential components of a successful occupational risk-reduction strategy, the final rule contains several requirements relating to providing pesticide safety training and information to employees. These are requirements for: (1) Pesticide safety training for all workers and handlers, (2) use of a pesticide safety poster, (3) access to labeling information, and (4) access to information about what pesticides have been used on the establishment.

a. *Training.* All agricultural workers must have basic pesticide safety training. All handlers must have basic pesticide safety training, training on the handling of pesticides, and training on the use of PPE.

A poster summarizing the elements of basic pesticide safety must be posted at a central location on the agricultural establishment to reinforce the safety training.

b. *Access to product-specific information.* Pesticide handlers must have knowledge of and access to the information on the labeling of the product they are using; early-entry workers must have knowledge of the information on the labeling. Employees must have access for 30 days after the application and any REI to a centrally located listing of information about any product used on any area on the establishment.

C. Summary of Risk-Benefit Analysis

EPA estimates that at least tens of thousands of acute illnesses and injuries and a less certain number of delayed onset illnesses occur annually to agricultural employees as the result of occupational exposures to pesticides used in the production of agricultural plants. These injuries and illnesses continue to occur despite the protections offered by the existing part 170 and by product-specific regulation of pesticides. Therefore, the Agency has determined that occupational exposures of agricultural employees to pesticides and pesticide residues continue to cause adverse effects in a broad range of agricultural sectors and that it needs to provide additional regulatory protection for such workers.

EPA could, as an alternative to issuing the pesticide product-specific aspects of this regulation, delay action until the development of additional product-specific data and analyses permit a product-specific solution. These data and analyses, in large part, will be generated through the ongoing reregistration process, but, under the present conditions, will not be completed until the year 2002 at the earliest.

EPA has chosen to issue a rule at this time, because EPA cannot, through a product-by-product review, quickly or adequately reduce the incidence of pesticide-related injuries and illnesses. The Agency's workload precludes rapid reevaluation of large numbers of products, even if the needed data were available now. Moreover, many of the protections of this rule are not product-specific. Instead, they establish general protections, such as training, notification, and decontamination, that are also vital in protecting agricultural employees from risks associated with pesticide use.

The Agency believes that this rule will reduce substantially the current illness and injury incidents at modest cost to agricultural employers, pesticide handler employers, and registrants. The rule requires: (1) Restrictions on entry by agricultural employees into pesticide-treated areas for, depending on pesticide toxicity, 12 to 48 hours (72 hours in certain limited circumstances) after application, (2) the use of PPE for persons handling agricultural pesticides and for persons who must enter pesticide-treated areas before the expiration of the REI, (3) training for agricultural employees about hazards from exposures to pesticides, (4) that information be provided to pesticide handlers and early-entry workers, and be available to other agricultural employees, about the specific pesticides to which they will be exposed, (5) that water, soap, and towels be made available to agricultural employees to enable them to wash off pesticides and pesticide residues routinely and after emergency exposures, (6) that emergency assistance be made available to agricultural employees if a pesticide-related illness or injury occurs or is suspected, (7) that agricultural employees, other than pesticide handlers, be prohibited in areas being treated with pesticides, and (8) that agricultural employees be notified of areas that are being treated or that remain under an REI through oral warnings or through warning signs posted at the treated area, or, in the case of some particularly hazardous pesticides, through both oral and posted warnings.

EPA, drawing on its expertise in regulating pesticides, has determined that these simple measures are likely to reduce substantially the number of pesticide-related illnesses and injuries to agricultural employees. Both the frequency of illness and injury incidents under existing conditions and the expected reduction in the number and severity of these incidents due to promulgation of this rule are difficult to quantify. However, the Agency believes that the reductions will be significant. In its Regulatory Impact Analysis (RIA), EPA has calculated an incremental first year compliance cost of $94.3 million for this rule and an annual incremental compliance cost of $49.4 million in subsequent years. The continuing annual incremental cost of this rule represents only one tenth of one percent

of the total 1987 value of production for all agricultural sectors subject to this final rule. Assuming that the majority of the current acute illness and injury incidents in agricultural employees caused by occupational exposures to pesticides are prevented through compliance with this new rule, there will be significant benefits to agricultural workers and pesticide handlers at a modest cost. Furthermore, the Agency is convinced that a substantial number of additional incidents caused by delayed-onset illnesses can be prevented through compliance with this new rule. Such expected avoidance of delayed-onset illnesses in workers and handlers would also reduce the costs attributable to acute incidents avoided.

The Agency believes that, due to this new agricultural worker protection rule, the benefits in decreasing the number and severity of pesticide-related illnesses and injuries to agricultural employees exceed the costs of the rule to agricultural employers, pesticide handler employers, and registrants. Therefore, EPA hereby promulgates this rule in the conviction that this mechanism is the best means of reducing the unreasonable adverse effects from pesticide-related illnesses and injuries to agricultural employees in the near term.

Some persons who commented on the proposed worker protection rule questioned the necessity for the rule in specific sectors of agriculture and requested exemptions for those sectors. However, EPA believes that the record of illness and injury incidents resulting from occupational exposures of agricultural employees to pesticides used in the production of agricultural plants and the undisputed inherent acute and delayed-onset toxicity of those agricultural pesticides supports the Agency's conclusion that such agricultural employees are subject to unreasonable adverse effects from pesticide use across the broad range of agricultural sectors covered by this final rule. Furthermore, no persuasive evidence has been brought to the Agency's attention which demonstrates that any individual sector of agriculture is not subject to unreasonable risks of employee illness and injury. EPA is not persuaded to delay promulgation of this rule until data and analyses specific to each agricultural sector and to each pesticide are generated.

Under FIFRA, EPA is authorized to promulgate regulations to mitigate unreasonable adverse effects that may result from exposures to pesticides. The Occupational Safety and Health Act (OSH Act) is similar in that the Occupational Safety and Health Administration (OSHA) is granted authority to promulgate regulations to mitigate "a significant risk." A recent court decision that upheld the issuance of OSHA's hazard communication rule (29 CFR 1910.1200) was based solely on a finding of generalized risk; the United States Court of Appeals for the Third Circuit stated:

> This rulemaking proceeding produced a performance-oriented information disclosure standard covering thousands of chemical substances used in numerous industries. For such a standard the significant risk requirement must of necessity be satisfied by a general finding concerning all potentially covered industries. A requirement that the Secretary assess risk to workers and need for disclosure with respect to each substance in each industry would effectively cripple OSHA's performance of the duty imposed on it . . . to protect all employees to the maximum extent feasible . . . [Associated Builders and Contractors, Inc. v. Brock, 862 F.2d 63 at 68 (3d Cir. 1988)].

For the same reasons, EPA is convinced that it is not required to make a detailed risk finding with regard to every pesticide product or to every sector of agriculture before taking action to protect all agricultural employees.

D. Minor Crop Statement

According to the Council for Agricultural Science and Technology's June 1982 report, *PESTICIDES, Minor Uses/Major Issues:*

> Vegetables, fruits, nuts, herbs, ornamentals, trees, and turfgrass are often referred to as minor crops because the acreage and volume of production of any one of the many crops in these groups are much below that of corn, soybean, wheat, or any of the other major field crops. Minor crops, as well as major crops, must be protected from insects, weeds, and diseases so as to be economically produced. Specialized pest control needs also exist for major crops in certain situations. Pesticides developed for use on minor crops and to meet the specialized needs for major crops are referred to as minor use pesticides.

The minor use crops are the ones this Worker Protection Standard will impact the most. Much of agricultural labor is used on minor crops, and it is in the production of these crops where the greatest chance of pesticide exposure to agricultural workers occurs.

E. Compliance Dates

To ensure that pesticide product labeling bearing requirements of the new standard does not find its way to users before information on compliance can be disseminated, the new labeling may not be used until April 21, 1993. At that time, specified selected provisions of the regulation will become enforceable to support new instructions to users on the labeling. After April 21, 1994, all agricultural pesticide products sold or distributed by registrants must bear the new labeling. After April 15, 1994, all provisions of the regulations are enforceable when pesticides with the revised labeling are used. After October 23, 1995, all agricultural pesticide products sold or distributed by anyone must bear the new labeling.

III. Provisions of the Final Rule

A. Restrictions Associated With Applications

Present part 170 prohibits the application of any pesticide in a way that directly or through drift will contact workers or other persons who are not involved in the pesticide application. It also requires unprotected persons to vacate the area. The Agency proposed to continue this provision with some changes.

1. *General restriction.* The NPRM proposed changes to the existing general prohibition: "No owner or lessee shall permit the application of a pesticide in such a manner as to directly or through drift expose workers or other persons except those knowingly involved in the application. The area must be vacated by unprotected persons." The Agency proposed to substitute the word "contact" for the less precise term "expose" and to clarify the requirement that unprotected workers must vacate the treated area during application by modifying the language to: "No worker shall be allowed or directed to enter or remain in an area during the application of any pesticide to the area, unless the worker is a handler involved in the application of the pesticide." Since these regulations apply only to workers, all references to "other persons" were deleted in the proposal.

There were few comments on these application restrictions. One comment stated that workers should be permitted to remain in the treated area during application under some conditions. For example, planting crews may need to be in a field with the planter during an application of a granular pesticide; field crews may need to be in the same field but may be distant from the area under treatment; and workers should be able to remain in a treated area if they are upwind from the treatment or if an "adequate barrier" or buffer zone separates them from the application. Some comments expressed concern for protecting the public from agricultural pesticide uses such as in retail greenhouses, at "you-pick" farms, in

parks and recreational areas, along roads and rights-of-way, and in schools.

In the final rule, the language from the NPRM has been modified. Section 170.110 states that "during the application of any pesticide . . . the agricultural employer shall not allow or direct any person . . . to enter or to remain in the treated area." The exception found in the proposal for a "worker [who] is a handler involved in the application" has been changed to an exception for "an appropriately trained and equipped handler." These changes were made to make it clear that only handlers trained and equipped as required by this rule can be in an area during application. Other workers, even if protected, are not permitted to be in the area.

The Agency has been persuaded by the comments to reinsert the clause "and other persons" into the section prohibiting application in a way that will contact workers (§ 170.210). Pesticide applicators must refrain from applying pesticides in areas where any person is likely to be touched by the chemical—either directly or from the drift or fallout of the application. This responsibility is irrespective of the relationship of the handler to the person in or near the treated area. This provision is intended to protect workers or other persons on agricultural establishments in or near the treated area even if those persons have no reason or privilege to be in that location. The prohibition is consistent with present part 170, which declares that applying pesticides directly on anyone, whether a worker or any other person, is a misuse and is subject to penalty.

2. *Application restrictions in nurseries and greenhouses.* EPA proposed more stringent application restrictions for nurseries and greenhouses than the general application restriction in present part 170 or those proposed for farms and forests. In greenhouses and nurseries, production areas are often close together. Plants requiring differing pesticide treatments and hand labor schedules may occupy the same bench or bed. In the NPRM, the application restrictions were discussed under the heading of reentry restrictions, but several comments requested clarification of the proposed language. Therefore, in the final rule, EPA is separating the requirements into two parts, restrictions associated with applications and post-application entry restrictions.

In greenhouses, employees often do diverse tasks, including the application of pesticides, close to other activities. EPA recognized that exposure could occur to workers in areas adjacent to the treated area during some pesticide applications and with some pesticide formulations.

The Agency proposed specific requirements for four different types of applications in greenhouses:

a. The entire enclosed area of the greenhouse must be vacated during the application of a pesticide applied as a fumigant, smoke, mist, aerosol, or fog, or whose label requires a respiratory protection device for applicators.

b. The pesticide-treated area plus 25 feet in all directions must be vacated for any application other than those in paragraph (a) above if there is no ventilation in the enclosed area during the application and the pesticide is applied from a height of more than 12 inches from the planting medium, or is applied using fine spray droplets or a spray pressure greater than 40 psi.

c. The entire enclosed treated area in the greenhouse must be vacated during application if ventilation occurs in the enclosed treated area during the types of application described in paragraph (b) above.

d. Only the pesticide-treated area must be vacated during application of pesticides applied from a height of 12 inches or less and applied as a dry formulation, or applied using coarse spray droplets and spray pressure less than 40 psi.

Nursery exposure situations are similar to those in greenhouses, except that nurseries: (1) Have lower inhalation hazards, because they are not enclosed structures, (2) do not have ventilation systems that can be turned on and off at will, but are constrained by the direction and speed of the wind, and (3) sometimes use aerial applications, upward-directed, and very high pressure (greater than 150 psi) sprays. The areas with restricted worker entry during applications in nurseries were defined by the types of applications:

i. For soil-directed applications, the restricted area is the treated area,

ii. For downward-directed applications, the restricted area is the treated area plus 25 feet downwind and 10 feet in other directions.

iii. For applications by aerial, upward-directed, or high-pressure sprays, the restricted area is the treated area plus any moistened or dusted area.

Most comments concurred with the proposed definitions of areas restricted during applications for greenhouses and nurseries. One comment stated that the 25-foot "barrier" zone was too small to be protective. Another requested that the 25-foot area restricted during applications not apply to pesticides in toxicity categories III and IV. One comment requested that "soil-directed" be redefined as pressure up to 60 psi if water breakers are used.

A few comments requested clarification of whether the specified 25-foot area restricted during application extended to areas beyond the greenhouse or, in nurseries, extended off the property.

The Agency agrees with the recommendations that greenhouse and nursery restrictions be clarified. The restrictions in greenhouses have been summarized in a table containing the restrictions during applications and the entry restrictions after application (§ 170.110(c)). A similar table has been prepared for applications in nurseries (§ 170.110(b)).

To provide a more useful description of the area restricted during application for employees in nurseries, the Agency specifies that an area of 100 feet in each direction around the treated area must be vacated during applications using aerial, upward-directed, or high-pressure sprays instead of "the area dusted or misted"; EPA modified the area restricted during application to 100 feet beyond the treated area in nurseries during fumigant, smoke, mist, fog, and aerosol applications.

The prohibition against applying pesticides in a way that will allow contact with workers or other persons is absolute. If an applicator has reason to believe that workers (or other persons) may be contacted by a pesticide during a pesticide application in a greenhouse or nursery, even if those workers (or other persons) are in compliance with the minimum distance requirements, the application may not take place until those workers (or other persons) leave the area.

The Agency is not persuaded to exempt pesticides in toxicity categories III and IV from these provisions. The intent is to reduce occupational exposure to pesticides, regardless of their acute toxicity. The Agency is concerned also about possible subacute, chronic, and reproductive or developmental effects from pesticide exposure.

The Agency concurs that, except for fumigation when the entire greenhouse and any adjacent structures that cannot be sealed off from the treated area must be vacated, subenclosures in the greenhouse are permissible and these subenclosures constitute the area that must be vacated during application. If the treated area is enclosed, the 100- or 25-foot zones are not required. The Agency's interpretation is that the 25-foot or 100-foot areas restricted during application do not extend beyond the greenhouse, or beyond the property line

of the nursery. However, the prohibition against contacting workers or other persons does extend beyond such boundaries.

A few comments requested clarification of "downwind" in a nursery where wind currents tend to be multidirectional over time. The Agency concurs with this observation and has determined that requiring a 25-foot area beyond the treated area in all directions will be more protective for workers.

3. *Restrictions with fumigants.* Although some comments suggested that the entry restrictions for fumigants were adequate, some stated that the restricted-entry area for a fumigant should be defined as the "entire enclosed structure" rather than the "enclosed area" to differentiate between an area enclosed by a temporary barrier and the greenhouse itself.

Some comments requested that "fumigant" be defined to distinguish it from a mist or an aerosol. One comment recommended prohibiting any early entry into a greenhouse following fumigation except to determine fumigant concentration or to facilitate ventilation. A comment requested that the ventilation criteria for defining dispersed vapors specify the minimum number of required air exchanges needed. Other comments stated that the proposed ventilation criteria may not be adequate for large production areas if only small windows or fans are used and recommended that replicated tests be conducted using available ventilation to determine the time necessary to achieve the permissible exposure level for a specific site.

In the final rule, the Agency defines a fumigant as "any pesticide product that is a vapor or gas, or forms a vapor or gas on application, and whose method of pesticidal action is through the gaseous state." Final part 156 requires pesticide registrants to identify fumigants on the front panel of the label.

The Agency has determined that a fumigant application is complete only when (1) any exposure level listed on the product labeling is reached, or (2) if there is no labeling specified exposure level, when one of the ventilation criteria has been met. The fumigant continues to disperse throughout the treated area after its release. Persons are exposed to the fumigant when they enter fumigated areas to measure ambient concentrations of fumigant or to facilitate ventilation by manipulating ventilation systems in greenhouses or by removing tarpaulins or other coverings from outdoor fumigation sites. These persons, therefore, are handlers of the fumigants. The Agency has changed the definition of handlers to include such persons and has extended the application prohibition for fumigants in greenhouses to include the time needed to reach the exposure level listed in the labeling or to meet one of the ventilation criteria. During this time, only handlers who have the protections mandated on the labeling and who meet the other requirements in part 170 may enter the treated area. These handlers may enter the treated area only to measure the fumigant level, remove coverings, or operate the ventilation system.

The gaseous nature of fumigants requires that the entire structure, including any adjacent structure that cannot be sealed off from the treated area, be vacated during application. Temporary barriers such as curtains or shields are not designed to be air-tight and therefore would not prevent exposure to persons in areas adjacent to those barriers. EPA has reworded the application restrictions for fumigant applications in greenhouses to specify that the entire greenhouse plus any adjacent structure that cannot be sealed off from the treated area, not just the "entire enclosed area," is the treated area and therefore is restricted.

The Agency concurs that a specific number of complete air exchanges should be specified as constituting sufficient ventilation following a fumigant application (or other airborne application) in a greenhouse. The Agency has concluded that 10 is the minimum number of air exchanges needed. (If each air exchange removed only 50 percent of the pesticide, 10 exchanges should leave approximately 1/1,024 of the original volume of pesticide.) In proposing the ventilation criteria for "vapors dispersed," EPA used the limited data available and consulted with authorities in greenhouse pesticide application processes to establish appropriate and reasonably conservative criteria for protecting workers from inhalation exposure following fumigation in greenhouses.

Several comments noted that many greenhouses are acres large and that workers should be allowed to work in one end of the greenhouse while a spraying application is conducted in the other end of the greenhouse as long as any mechanical ventilation draws the drift away from the workers.

The restriction on ventilation was intended to protect workers from airborne vapors, spray, and dusts. Without ventilation, the transport of the pesticide off-site would be minimal and presumably would move in all directions equally. With ventilation (passive or active), air movement in any direction is possible. The amount of drift is dependent on such factors as the size and weight of droplets or particles, the pressure of spray, the distance from application equipment to treated surface, and the force and direction of the ventilation. Even "passive" ventilation involves factors such as size of vents, the location of vents, and the outdoor wind currents. The Agency is not persuaded that it is possible to predict the direction or distance that sprays or dusts might drift for all ventilation systems used by the greenhouse industry; therefore, it will continue to prohibit workers from remaining in an area surrounding the application. The dimensions of the area depend upon the type of formulation and the type of application. EPA agrees that after application is completed, the sprays and dusts will settle out of the air and no longer pose an exposure hazard to adjacent workers. Workers may enter the greenhouse after application to work anywhere except in the treated area as defined by Table 2 in § 170.110(c)(4).

In the NPRM, EPA listed criteria for determining when vapors have dispersed after the application of a fumigant. Some comments requested clarification and guidance on when vapors are considered dispersed following application of nonfumigant pesticides that require the use of a respirator during application or that are applied as smoke, mist, fog, or aerosol.

The Agency has modified the application restrictions for pesticides that are applied as fumigants, smokes, mists, aerosols, or fogs, and for applications that require the use of a respiratory protection device, to include ventilation criteria that must be met before workers are allowed to return to work anywhere in the enclosed area, or, in the case of fumigant applications, anywhere in the entire greenhouse plus any adjacent structure that cannot be sealed off from the treated area.

B. Entry Restrictions

The Agency long has recognized the value of limiting agricultural workers' exposure to pesticides through the use of REIs. Present part 170 established that no worker without the prescribed protective clothing should be allowed to enter a treated area to perform a hand labor task until the expiration of an REI. In the NPRM, EPA did not change this basic requirement, but did extend the scope of this proscription to include any farm, forest, nursery, or greenhouse workers who contact pesticide residues on treated surfaces or in soil, water, or air, not just those who are performing hand labor tasks. The NPRM required that other protections, such as PPE,

training, and decontamination facilities, be provided to early-entry workers.

1. *Restricted-entry intervals.* Present part 170 established a generic "minimum" REI for pesticides used on agricultural sites covered by that part, and it set specific REIs of either 24 or 48 hours for 12 pesticides. Other REIs have been established during the registration, reregistration, and special review processes. Some of these intervals are "permanent" (based on adequate entry data as required by 40 CFR part 158 or a waiver of data submission); others are interim intervals (not based on part 158 entry data) pending the generation of adequate data.

Under existing Agency policy, the establishment of REIs has been limited to pesticides used on agricultural crops where workers perform "hand labor operations," involving "substantial contact with treated surfaces." Workers may have contact with treated surfaces from activities such as moving irrigation pipes and scouting, tasks usually not considered as "hand labor" tasks. The shift from routine preventive pesticide applications to the increasing use of pest control on an as-needed basis has resulted in the need for more frequent post-application entry by crop advisors, such as integrated pest management (IPM) scouts, professional pest management consultants, and growers, to determine the status of insect, mite, disease, and weed pests at each stage of crop development. The amount of contact with treated surfaces in these activities depends on variables such as the height and density of the crop, the nature of the activity, the surface that contains the pesticide residue, and whether residues are dry or wet.

Adverse effects on workers may result from a combination of the toxicity of the pesticide and the amount of exposure. Even small amounts of highly toxic pesticides can cause poisoning.

For these reasons, the Agency decided that any activity that results in contact with anything that has been treated with the pesticide to which the REI applies may be harmful to workers. Thus, the Agency proposed that REIs apply to all pesticide products used on agricultural plants as defined by this part, regardless of type of worker activities associated with particular agricultural plants.

In proposing to revise part 170, the Agency did not contemplate a change to the part 158 process for establishing permanent REIs. Rather, the proposed revision to part 170 represents a change in current Agency policy of setting interim REIs which apply until permanent REIs are established on the basis of part 158 entry data.

Therefore, part 156 retains all permanent REIs set by EPA on the basis of adequate data. It also retains all previously established interim intervals that are longer than those that would be established pursuant to this rulemaking in part 156. These longer REIs have been based, in general, on either delayed (chronic) effects or other exposure hazards such as persistence, post-application chemical transformations, or potential for severe skin sensitization.

2. *Length of restricted-entry intervals.* In the NPRM, the Agency proposed to retain the existing minimum REI of "until sprays have dried, and dusts have settled" for most pesticide applications and to modify it by adding the phrase "or vapors have dispersed" to protect workers immediately after applications of fumigants, mists, fogs, aerosols, or smokes. It also proposed specific REIs of 48 hours for pesticides that contain organophosphates or *N*-methyl carbamates in toxicity category I, and 24 hours for pesticides that contain organophosphates or *N*-methyl carbamates in toxicity category II and for other active ingredients in toxicity category I. The Agency considered other options that reflect varying acute toxicities.

The comments on this issue focused on the length of the proposed intervals and the bases for selecting the REIs.

a. *Minimum restricted-entry intervals.* Several comments endorsed the concept of "sprays dried, dusts settled, vapors dispersed" as a minimum REI. Some comments requested the Agency to establish a minimum REI of 24 hours for all pesticides; others explicitly opposed a 24–hour minimum REI for all pesticides. Another comment suggested that there be no restricted-entry period less than 12 hours.

One comment stated that enforcement of "sprays have dried, dusts have settled, or vapors have dispersed" would be difficult. Others stated that determining when "sprays have dried, dusts have settled, or vapors have dispersed" is not feasible in some greenhouses because in propagation and misting situations it is difficult to ascertain if sprays have dried because foliage is kept constantly wet.

The Agency agrees that in some circumstances it is difficult to determine when the sprays have dried, the dusts have settled, or the vapors have dispersed; judgment is required to assess when such an REI has expired. The rates at which sprays dry, dusts settle, or vapors disperse depend on factors such as temperature, humidity, rainfall, irrigation, dew deposition, wind, crop density, height, leaf configuration, amount of sunshine, and type of pesticide formulation used. Parts of a treated area may be dry while others are not dry. In dense crops, such as mature corn, the foliage in the center of the stand may be wet while the foliage in the outer areas, where a supervisor is most likely to check, may be dry. Rewetting of foliage because of rain, irrigation, or dew may cause confusion and uncertainty about whether the sprays have dried. Wind may make it difficult to determine whether dusts have settled.

Many comments requested the Agency to establish minimum REIs to protect against possible unknown chronic or delayed health effects. These comments expressed concern that because product-specific health-effect evaluations take the Agency a long time to conduct, agricultural workers continue to be exposed to chemicals whose potential for causing birth defects, cancer, genetic mutations, and other systemic damage has not been tested. They recommended that the Agency consider the potential chronic and other delayed health effects and establish longer REIs.

The Agency has decided to establish a minimum REI of 12 hours for all pesticide applications to replace the "sprays have dried, dusts have settled, vapors have dispersed" requirement. This will provide a margin of safety against occupational exposure to all pesticides and eliminate the need for pesticide users to judge how long workers should be kept out of an area. The disruption to agriculture, and thus the cost, should be minimal; pesticides could be applied in the evening, and worker entry would be allowed the following morning. This REI of 12 hours could be modified through the reregistration (or registration) process on a case-by-case basis most often involving submission of full entry data (part 158).

The Agency will continue to establish REIs on a case-by-case basis for products where nonacute health effects are a concern.

b. *Specific restricted-entry intervals.* Although most comments supported the REIs proposed and many stated that in most circumstances agriculture would be able to comply, one comment stated that REIs longer than the minimum should be reserved for compounds whose toxicity characteristics or exposure history indicated a need for longer intervals.

Some comments supported a 48–hour REI for all active ingredients in toxicity category I and a 24-hour REI for all those in toxicity category II. Other comments requested that REIs not

exceed days-to-harvest intervals or noted that 48 hours is the maximum feasible REI under current crop production methods. Many comments supported 72–, 48–, and 24–hour REIs for pesticides in toxicity categories I, II, and III, respectively. Others specifically opposed a 72/48/24–hour scheme or stated that the REIs proposed should be determined on a case-by-case basis when data indicate a need.

The Agency's proposal was based on California data showing that, from 1976 to 1985, 90 percent of the systemic poisonings caused by active ingredients in toxicity category I and 70 percent caused by active ingredients in toxicity category II involved either organophosphates or *N*-methyl carbamates. These data suggest a relationship between the classes of chemicals used and poisonings. However, a few comments stated that the apparent relationship between chemical class and poisoning in the data is not unexpected; because of the types of crops grown in California, it is likely that 90 percent of the products in toxicity category I and 70 percent of the products in toxicity category II applied were anticholinesterase compounds.

Many respondents objected to the distinction made between organophosphate and *N*-methyl carbamate pesticides and other pesticides in the same toxicity category, stating that the subdivision of toxicity categories I and II by chemical family is not defensible scientifically. These comments asserted that it would be more appropriate to use acute toxicity data as the basis for generic REIs, and to include all compounds in a toxicity category. In contrast, some comments requested that only organophosphate and *N*-methyl carbamate pesticides have REIs.

After reevaluating this issue, the Agency agrees that chemical class should not be a criterion for establishing REIs. The Agency expects that chemicals in the same toxicity category will pose similar risks of adverse effects from acute toxicity; thus, no distinction should be made among the chemical classes within a toxicity category. The Agency has changed the specific REIs. In the final rule, all pesticides in toxicity category II have REIs of 24 hours, and all pesticides in toxicity category I have REIs of 48 hours. All other pesticides (those in toxicity categories III and IV) are subject to the 12–hour minimum REI.

Studies have shown that some organophosphates transform into more toxic products in arid conditions. The Agency has been persuaded that, in areas receiving rainfall of less than 25 inches per annum, organophosphates that are in toxicity category I and that are used outdoors should have an REI of 72 hours. Acceptable sources of statistics on average annual rainfall for an area are nearby weather bureaus, such as one located at a local airport or one affiliated with the National Oceanographic and Atmospheric Administration (NOAA).

The Agency proposed that REIs be based on the acute toxicity of the technical grade of the active ingredient. Some comments requested that inert ingredients be considered in setting REIs.

The Agency believes that the inert ingredients in pesticide products generally are not of a nature, or do not remain in treated areas long enough, to present hazards for reentering workers. Accordingly, REIs will be based on the possible hazards of residues of active ingredients. The Agency is reexamining the hazards of inert ingredients through a separate process.

The Agency proposed setting intervals based on the highest toxicity category indicated by available data on acute dermal toxicity or skin and eye irritation potential, determined by the criteria of 40 CFR 156.10(h)(1) of this chapter. If no dermal toxicity data are available, oral toxicity data would be used to set REIs.

Workers may have dermal, oral, and respiratory exposure to pesticides; for workers entering treated fields, the predominant route of exposure is dermal. The Agency considered using only dermal toxicity to establish REIs, but the potential for eye and skin irritation and for respiratory exposure may be significantly large in some entry situations. Cases of eye or skin irritation are four times as common as those of systemic poisonings among reentering workers.

Inhalation exposure is a hazard in enclosed areas, such as greenhouses, especially after applications of fumigants or pesticides with high vapor pressure; it is less important as a hazard for entry into treated areas outdoors, except during removal of barriers, such as tarpaulins, after application of a fumigant. Oral toxicity data are the most widely available data on pesticides, but oral exposure in agriculture is related to the worker's personal habits, such as not washing hands and face before eating, drinking, or smoking.

The Agency has determined that entering areas while inhalation exposure remains a hazard is not safe or practical for persons other than appropriately trained and equipped pesticide handlers. Therefore, EPA has modified the entry restrictions in greenhouses to permit only handlers to enter greenhouses until air concentration levels or ventilation criteria have been met following applications of airborne pesticides or pesticides that require a respirator during application. The Agency also has modified the definition of "handler" to include persons who must enter areas treated with soil fumigants to adjust or remove soil coverings, such as tarpaulins.

A few comments recommended that use patterns and mode of action be considered in setting REIs. Another recommended that the persistence of the residues should be considered in setting REIs since some injuries, such as eye injuries or birth defects, are unrelated to the acute toxicity of the chemical.

Basing REIs on particular use patterns, on the mode of action, or on a particular use's potential for exposure is not feasible because of variations in potential exposure related to crop, cultural practices, and application techniques. These considerations are appropriate for establishing permanent REIs on a case-by-case basis such as through the reregistration process.

c. *Establishing entry restrictions in the future.* The REIs established through this final rule are intended to remain in effect until the reregistration process or other comprehensive EPA review process makes definitive REI determinations. In most circumstances, the Agency expects that any REI established as the result of the later Agency review would prohibit early entry to perform routine hand labor tasks. However, such REIs would be based on a risk-benefit judgment that takes into account the prohibition against routine early entry to perform hand labor tasks.

The Agency expects to establish appropriate entry restrictions on the basis of several types of data. These may include, as applicable, data on how the residue degradation rate and dislodgeability (amount readily transferable from a surface to persons contacting that surface) are influenced by pesticide formulation type; temperature; humidity; soil type; rainfall, dew, and irrigation practices; sunlight; crop type, height, and density; specific production practices, or worker activity and length of exposure. When feasible, the Agency may establish product-specific REIs that vary depending on one or more of these parameters. For example, the Agency may establish longer REIs for timed-release formulations, which are designed to release the active ingredient over an extended time period. The Agency may determine that, for some tasks, shorter REIs are warranted for "low crops" than

for tree crops and other "high crops," such as corn, because workers' exposure levels would be expected to be lower. The Agency may also determine that in areas with characteristically hot, arid conditions and certain soil types, longer REIs are warranted for certain active ingredients because of slower degradation, higher transferability, and transformation of the active into more toxic forms. The Agency may also impose longer REIs for some active ingredients in areas with heavy dew or frequent light rain because those actives are either activated by moisture or transformed by moisture into more toxic forms. On the other hand, if adequate data exist, the Agency may decide that it is feasible to allow a reduction in REIs when a specified amount of rain has fallen or over-the-top irrigation has been applied to the treated area.

Another type of product-specific restricted-entry determination might include situations where data indicate that worker contact with the treated surfaces could be acceptably reduced through the use of minimal PPE or mechanical devices that physically separate the worker from the treated surfaces. Such determinations might, for example, allow early entry following soil-directed applications if the worker is wearing chemical-resistant footwear and is performing tasks that do not involve skin contact with the soil surface. Another possible restricted entry adjustment would be to prohibit all routine hand labor tasks for a specified time period, such as 1 or 2 days, and then to allow certain hand labor tasks during the remaining restricted-entry period if certain (perhaps minimal) PPE is worn and other precautions are taken. Still another possible restricted-entry adjustment might allow early entry (with or without minimal PPE) if devices, such as mechanical detasselers or roguers, are used that minimize worker exposure to treated surfaces. The final rule does contain an exception that allows early entry for activities that involve no contact with anything that has been treated with the pesticide to which the REI applies, including, but not limited to, soil, water, air, or surfaces of plants in the treated area.

Unfortunately, it is unlikely that such product-specific decisions will be routine, because of their complexity. Conveying such exceptions and restrictions to users in a simple, intelligible manner is difficult. The necessary labeling would be unduly complex. The Agency projects that such adjustments will be most likely in those situations where data indicate that a relatively lengthy REI is necessary under average conditions to adequately reduce risk, but where such a lengthy REI may make the pesticide's use infeasible for certain crops for which hand labor is necessary within tight timeframes after application. Under these circumstances, the Agency will consider alternatives to the prohibition of routine hand labor tasks throughout the REI. In any such deliberations, however, EPA will also consider whether workers can be adequately protected under a more complex set of entry requirements.

For the longer run, because of the many factors that affect worker exposure to pesticide residues, the Agency is exploring alternative methods of establishing REIs and alternatives to REIs. One possible approach involves on-site determination as to whether residues have degraded (or are otherwise unavailable) to a degree deemed acceptable for workers to safely enter to perform hand labor tasks involving contact with treated surfaces. One promising technique involves immunoassay-based detection. Immunoassay techniques could provide rapid, simple, and cost-effective methods for determining actual foliar or soil residue levels under field conditions. It is expected that inexpensive kits can be developed that will yield results in a short period of time, thus enabling site-specific determination as to whether residues have decreased to an Agency-established acceptable level for worker entry. This technology would also provide an effective means of signaling to the agricultural employer when residues remain sufficiently high so as to make worker entry unreasonably risky, even if the REI had expired.

EPA has determined that more research is required to develop immunoassay and other site-specific monitoring systems for field residues. However, the research data to date indicate that an immunoassay-based system probably could be developed. Immunoassay devices use antibodies as receptors to sample the environment of the exposed surface (persons, foliage, soil, etc). Specific antibodies to many pesticides of concern already have been developed and evaluated, but specific antibodies for other priority compounds need to be identified.

The Agency strongly encourages the rapid development of practical and reliable techniques of this kind and welcomes further information on ongoing research and the opportunity to cooperate with developers on the necessary research. To support the goal of improving such technology, the Agency also intends to consider requiring the development of such detection methods for the registration or continued registration of selected pesticides. Furthermore, as product-specific reentry data are generated and analyzed, EPA will investigate the feasibility of adding information on the pesticide labeling that indicates the acceptable residue levels on the specific surfaces of concern for that product. Such information might encourage more rapid development and marketing of site-specific test kits.

3. *Entry before a restricted-entry interval expires*—a. *Entry for other than hand labor tasks.* Present part 170 allows workers to enter a treated area without PPE before the expiration of the REI if they are not performing hand labor tasks. The Agency proposed to modify this requirement by allowing entry into pesticide-treated areas before the expiration of the REI without protective measures only when there is no contact with pesticide residues on treated surfaces or in soil, water, or air. Pesticides would be considered to be in the air, for example, in a greenhouse or other enclosed area before the exposure level listed on the labeling has been reached or one of the ventilation criteria established by § 170.110(c)(3) or in the labeling has been met. Examples of "no contact" activities listed in the proposal included:

i. Operating a closed vehicle equipped with a properly functioning positive-pressure filtration system.

ii. Performing tasks that do not involve contact with the soil subsurface after a soil-incorporated or soil-injected pesticide application.

iii. Performing tasks that do not involve hand contact with the soil, planting media, or plants after a soil-directed or basal-directed application while wearing chemical-resistant footwear.

iv. Operating an open vehicle when the crop is not tall enough to brush against the worker or when pesticide residues could not drop from trees and other plants onto the worker.

v. Walking or riding through a pesticide-treated area on an aisle, a road, or a path, if the pesticide is applied or is directed in a way that would not cause residues to drop on the worker and if the worker cannot brush against treated plants or trees.

Many comments opposed any early-entry activities. It is not clear whether some were against early entry in situations where there would be no contact with pesticide residues.

The Agency recognizes the need to allow workers access to adjacent benches or adjacent plants in greenhouses and nurseries to carry out other plant production tasks. In the proposed regulation, the Agency intended to allow workers to pass through treated areas (walk around benches, down aisles, etc.) after the sprays and dusts had settled from the air, if no contact with the treated surface would result. The Agency considered that walking down an aisle would result in "no contact" after sprays and dusts have settled if the worker was wearing shoes with chemical-resistant soles, even if the spray or dust has been applied over a large area and the aisle has received some deposit. Although the "sprays and dusts have settled" provision has been deleted, the Agency believes that walking through a pesticide-treated area on an aisle or path would constitute "no contact" as long as residues cannot drop on the worker or the worker does not brush against treated surfaces.

The Agency does not intend that workers wearing PPE would be considered to have "no contact." Therefore, the example listed in the NPRM: "Performing tasks that do not involve hand contact with the soil, planting media, or plants after a soil-directed or basal-directed application while wearing chemical-resistant footwear" is not applicable to the final rule. The following are examples of situations that may be considered no contact after sprays, dusts, and vapors have settled out of the air:

(a) The worker is wearing footwear and is walking in aisles or on roads, footpaths, or other pathways through the treated areas where the plants or other treated surfaces cannot brush against the worker and cannot drop or drip pesticides onto the worker.

(b) The worker is in an open-cab vehicle in a treated area where the plants or other treated surfaces cannot brush against the worker and cannot drop or drip pesticides onto the worker.

(c) After a pesticide is correctly incorporated or injected into the soil, the worker is performing tasks that do not involve touching or disrupting the soil subsurface.

(d) The worker is in an enclosed cab on a truck, tractor, or other vehicle.

The Agency will permit entry to a treated area when the worker will have "no contact" with the treated surfaces.

b. *Entry for short-term tasks.* EPA proposed to allow worker entry into treated areas after sprays have dried or dusts have settled, but before the REI has expired, to perform any activity, if the workers are provided appropriate PPE, training, and decontamination facilities. The Agency anticipated that agricultural producers seldom would require workers to enter treated areas before the REI has expired because of the increased risk to the workers, the cost of providing PPE, and the problems of heat-related illnesses. It is expected that most agricultural management practices can be carried out after the REI expires; thus, few workers would need these protective measures.

A few comments supported the proposal that early entry be permitted with the use of PPE or stated that routine hand labor should be allowed if the worker is wearing the PPE required by EPA. Many comments opposed early entry even with the use of PPE. One comment noted that a requirement for the use of PPE by field workers is not practical and is not likely to be adhered to in many situations. A comment stated that the REI should be sufficiently long so that at its expiration there are no further concerns or restrictions on either the field activities or the clothing worn into the field.

Information gathered by the Agency during the process that led to the NPRM and comments that the Agency received in response to the NPRM have convinced EPA that entry during an REI to perform routine hand labor tasks is rarely necessary, especially when the REI is 72 hours or less. The Agency noted in the NPRM that:

> The Agency anticipates that agricultural producers will seldom require workers to reenter treated areas before the reentry interval has expired, because of the increased risk to the workers; the cost of providing PPE, decontamination water, and training; and the problems related to heat-induced illnesses. Since most agricultural management practices can be carried out after the reentry interval expires, few workers will need these protective measures.

Furthermore, comments received in response to the NPRM questioned the feasibility of workers wearing PPE while performing hand labor tasks under normal agricultural field conditions. The Agency has studied the issue of PPE for agricultural field workers who are performing routine hand labor tasks and has concluded that routine use of PPE, such as chemical-resistant gloves, footwear, and headgear, two layers of clothing, and protective eyewear, for such field workers is, in general, not only impractical, but also may be risk-inducing due to heat stress concerns. The Agency has determined that hired agricultural workers, especially harvesters, have a disincentive to wear PPE; because they frequently are paid at a piece rate, they have little tolerance for anything that hinders their speed and efficiency. The Agency concludes that it is likely that the PPE would be removed or would be worn incorrectly if it were required routinely in most hand labor situations. Many comments also observed that routine early entry during the REI was rarely necessary.

After consideration of the comments and the available data, the Agency has concluded that, under most circumstances, allowing routine entry for unlimited time to areas under an REI, even with PPE, decontamination, and training, will not reduce adequately the risk of agricultural workers' exposure to pesticides, and that the economic benefits associated with such routine early entry do not justify the risks associated with such early entry. Consequently, the Agency is convinced that routine hand labor tasks should not be allowed before the expiration of the REI, except in rare circumstances based on case-by-case consideration.

In this final rule, the Agency has therefore prohibited most entry during the REI to perform routine hand labor tasks. The Agency will allow necessary short-term activities, such as operating irrigation equipment, in areas remaining under an REI if: (1) There is no entry for the first 4 hours after application and thereafter until any exposure level listed on the labeling has been reached or any ventilation criteria established by § 170.110(c)(3) or in the labeling has been met; (2) no hand labor tasks are performed; (3) the time in treated areas does not exceed 1 hour in any 24–hour period for a worker; (4) the required PPE is provided, cleaned, and maintained for the worker; (5) the required decontamination and change areas are provided; and (6) the required safety training and labeling-specific safety information have been furnished.

As stated in the NPRM, the Agency considers the risk of exposure for early-entry workers to be comparable, in some situations, to the risk for pesticide handlers. Sometimes, early-entry workers may receive greater exposure than that encountered by an applicator of the pesticide. The Agency believes that there should be no entry to freshly treated areas for any reason until the dusts or sprays have settled and some drying or volatilization of the formulation has taken place; thus it has prohibited entry to treated areas for the first 4 hours after application. After 4 hours have elapsed, 1 hour should be sufficient time to do necessary "short-term" tasks, which the Agency is aware must be done, and should minimize worker exposure.

c. *Exceptions to the prohibition on routine early entry.* Although the

Agency has determined, in general, not to allow routine early entry even with the use of PPE, the Agency did receive information during the comment period from the cut flower and cut fern industry about the economic hardships that would result in that particular industry if routine hand labor activities were prohibited during REIs. In that industry, it appears that the risk-benefit balance might militate in favor of allowing some hand labor activity during the REI. While no information was submitted during the comment period demonstrating that other industries might suffer a significant adverse economic effect if routine early entry during REIs were disallowed, it is certainly possible that other industries, crops, or crop practices may be significantly affected by the prohibition of such routine early entry.

The Agency has, therefore, adopted an exception process that would allow interested persons to demonstrate to the Agency that, in a particular industry, crop, or crop practice, an exception should be granted to the general prohibition on routine early entry. Persons wishing to obtain an exception to the early-entry restrictions would submit a request for such an exception to the Agency.

The Agency encourages persons who wish to submit such requests to submit the requests as a group or association of affected parties, rather than as individuals. EPA expects that the most efficient and effective request process would ensue when a group or association of growers and/or workers with common interests present a single, consolidated request for an exception. Such a group request would both permit a more efficient review process and lend weight to the case that the exception was necessary to alleviate typical conditions in the commodity or crop-practice situation for which the exception is being requested and was not a highly-specific localized situation. Requests for exceptions that are limited to a narrow geographic area, such as a single agricultural establishment, must be accompanied by persuasive evidence that such a narrow geographic scope is appropriate.

The Agency also notes that all of the information pertinent to the specific exception must be submitted with the exception request. The rule states what types of crops and crop production practices might qualify for such an exception and what information must be supplied to the Agency in order for an exception to be considered. If a request for an exception is submitted to the Agency without all of the required information, the Agency shall return the request to the submitter. When a request for an exception that contains all of the required information is submitted to EPA, the Agency will publish a notice in the **Federal Register** stating that an exception is being considered, describing the nature of the exception, and allowing at least 30 days for interested parties to comment. The Agency will also send a copy of such exception requests to USDA at that time. EPA expects to cooperate with USDA in obtaining information necessary for analysis of the exception requests.

If such an exception is approved, the Agency will publish a notice describing the exception and the reasons for it in the **Federal Register**. The final rule also provides a means for the Agency to withdraw exceptions if the Agency receives poisoning information or other data that indicate that the health risks imposed by the early-entry exception are unacceptable or if the Agency receives other information that indicates that the exception is no longer necessary or prudent.

EPA will endeavor to review any requests for exceptions expeditiously. As stated above, requests from registrants or groups/organizations are likely to yield the most efficient review process. Also, the more specific the request, the more readily the Agency can evaluate the full range of impacts. The Agency will consider the economic urgency of the request and the timing of the pest concern, crop, or production practice for which the exception is being requested. To expedite the exception process, EPA intends to establish a formal exception-review procedure that remains outside of the usual registration and reregistration processes. A special organizational unit would be designated as responsible for receiving and processing exception requests, including establishing a mechanism for receiving comments, reviewing all submitted information, and facilitating the decision-making process among the Agency technical experts. EPA believes that this unique strategy will greatly expedite the exception process and allow the Agency to address exceptions in a timely manner. With this process, EPA will endeavor to respond in a timely manner when receiving requests for exceptions that contain all of the required information and will attempt to respond with special urgency to exception requests that are particularly crucial due to unexpected pest problems or crop-season timing.

The final rule provides that persons requesting an exception may assume that the exception has been denied if EPA has not published its decision whether to grant the exception within 9 months from the comment-closure date specified in the **Federal Register** notice in which the Agency announced that it would consider the exception, unless the Agency has taken action to extend its review period for a specified time interval due to the complexity of the exception request or to the number of exception requests concurrently under Agency review.

While exception requests may be filed immediately, the Agency is also interested in receiving additional comments and information on both the general prohibition of routine early entry for the performance of hand labor tasks during REIs and the mechanism and criteria for granting exceptions to that general prohibition. EPA is therefore providing an additional 60–day period during which written comments, data, and other evidence concerning these specific topics may be submitted to the Agency for consideration. Upon review of these comments, EPA may modify this final rule where appropriate. This additional comment period should allow for possible refinement of this rule without delaying its implementation and without delaying the consideration of exceptions that may prove to be necessary.

Comments that EPA has already received from the cut flower and cut fern industry have convinced EPA that this industry, at least, probably warrants such an exception. The decision that such an exception is probably warranted is based on a balance of the risks and benefits that would result from such an exception (see proposed exception to rule published elsewhere in this issue of the **Federal Register**). The Agency is unaware of any specific information indicating that crops or industries other than the cut flower and cut fern industry would qualify for such an exception, but the exception process adopted in this final rule provides interested persons an opportunity to submit relevant information to the Agency if they believe additional exceptions are warranted.

d. *Entry for agricultural emergencies.* Several comments suggested that early entry be allowed for emergencies on a case-by-case basis. If there are situations in which workers need to enter an area before the expiration of an REI, growers should be able to obtain permission, in advance, from the EPA or the State lead agency.

The Agency recognizes there may be a need for workers to enter a treated area

before the expiration of an REI to perform tasks, including hand labor tasks, in agricultural emergencies. The Agency regards an agricultural emergency as a sudden occurrence or set of circumstances that the employer could not have anticipated and over which the employer has no control, requiring entry into a treated area, when no alternative practices would prevent or mitigate a substantial economic loss. A substantial economic loss means a loss in profitability greater than that which would be expected on the basis of experience and fluctuations of crop yields in previous years. Only losses caused by the emergency conditions specific to the affected site and geographic area are considered. The contribution of mismanagement cannot be considered in determining the loss. Such emergencies might consist of unexpected and severe adverse weather, such as frost, high winds, tornado, or hurricane, or an unexpected and severe pest outbreak immediately before harvest on a time-sensitive crop such as the soft fruits, soft vegetables, or floral crops. If an emergency is anticipated through a weather forecast, pest outbreak bulletin, or other means, it is not acceptable to proceed with a pesticide application after becoming aware of an impending emergency and then require workers, due to the emergency, to enter the treated area before the REI has expired.

The Agency has modified the early-entry restrictions to permit entry to areas under REIs in agricultural emergencies if a State, Tribal, or Federal agency having jurisdiction declares that the circumstances for an agricultural emergency exist and the employer determines that the agricultural establishment is subject to the emergency. Entry is permitted if: (1) There is no entry for the first 4 hours after application and no entry thereafter until any exposure level listed on the labeling has been reached or any ventilation criteria established by § 170.110(c)(3) or in the labeling has been met, (2) the required PPE is provided, cleaned, and maintained for the worker, (3) the required decontamination and change areas are provided, (4) the required general training and label-specific information has been furnished, and (5) only tasks related to mitigating the emergency are performed.

C. Notice of Applications

The Agency proposed that workers on an agricultural establishment be notified of pesticide applications and areas remaining under an REI. An exception was proposed for farms, forests, and nurseries—no notification would be necessary if, from the start of application until the end of the REI, the worker would not enter, work in, remain in, or pass through, on foot or in an open vehicle, the pesticide-treated area or any neighboring areas, including growing areas and labor camps that are contiguous or separated only by a roadway from the treated area. A similar exception proposed for greenhouses stated that no notification would be required if, from the start of application until the end of the REI, the worker would not enter, work in, remain in, or pass through the greenhouse. These exceptions were designed to limit the notification requirement to those occasions where the most potential for accidental worker exposure exists and where notification would prove most useful. Notification would not be required when pesticides are applied at times when no workers are employed by the establishment or when pesticides are applied to (or an REI is in effect at) distant areas of the establishment where no work activities are occurring.

Some comments supported these exceptions; some requested that the exceptions be dropped and that workers be notified of any pesticide-treated area on the property, because crews may enter treated areas by mistake. One comment wanted to have information provided to workers about pesticides used in areas contiguous to the area where they will be working. Another noted that since only a small percentage of farms require hand labor for cultivation or harvesting, it seems impractical to post fields when the only one who would be entering is the farmer who caused the field to be treated.

A few comments requested a definition of the word "neighboring," and some stated that "neighboring areas" should be defined as property controlled and/or owned by the employer.

After careful consideration, the Agency has decided to retain but reword the exception to notification on farms and in nurseries and forests. The term "neighboring area" has been deleted; the final rule requires notification if workers may be within 1/4 mile of the treated area's perimeter. This distance was chosen for several reasons. First, data from studies show that residue drift from a treated area is negligible beyond 1/4 mile. Second, the Agency believes that 1/4 mile is the farthest distance that workers would be likely to digress from their path or work site for rest or meal breaks. Although the Agency believes that a prudent owner/operator of an agricultural establishment will inform adjacent property owners/operators of pesticide applications at their mutual borders, EPA has determined that such a requirement is beyond the scope of this rule. The exception to notification in greenhouses has not been changed.

The Agency has added an additional notification exception that applies to all agricultural establishments. Notice (oral or treated area posting) need not be given to a worker if the worker (1) applied or supervised the application of the pesticide for which the notice would be given and (2) the worker is already aware of the information that would be otherwise conveyed in an oral warning. This exception exempts establishments from having to orally warn or post warning signs at treated areas for an already-informed applicator of the pesticide. This exception would be especially important if the pesticide applicator is the only worker on the establishment for whom notification would otherwise be required.

1. *Oral notification.* The Agency proposed that workers be given daily oral warnings about pesticide-treated areas on farms and in forests, except as noted above. The warnings would consist of: (1) The location and description of the treated area, (2) the time during which entry is restricted, and (3) instructions not to enter the treated area until the REI has expired. The warnings would be required to be given in a manner the worker can understand.

Several comments supported the requirement for mandatory oral warnings on farms and forests because large numbers of agricultural workers would not be able to read material printed in English.

Some respondents felt that oral warnings should be required only on the first work day for any worker or when there is a change in the spraying schedules because daily warnings may cause workers to ignore the repetitive message. Some comments stated that oral warnings would be unworkable in some agricultural operations because employees may report to work from different locations at different times of the day, e.g., coming from on-farm camps or local housing or being bused from cities or other farms.

Other comments objected to mandatory oral warnings and requested that employers be given a choice of using oral warnings or posting warning signs. One respondent suggested issuing cards containing information about spraying to workers in lieu of oral warnings.

Some comments stated that oral warnings are more effective if they include information such as the name of the product or active ingredient, the location of labeling, and/or safety information for the product and the REI.

Most comments supported a requirement that oral warnings be communicated in a language the worker can understand. However, a few noted that it would be difficult for growers to find persons who could provide translations into all the languages that might be needed.

The Agency has been persuaded that farm and forestry operations should have the choice of notifying workers orally or by posting signs at the treated area. EPA is convinced that for highly diversified farms where different crops would be grown close together or for large agricultural operations where many workers are employed, oral warnings may be impractical and may not be as protective as posting signs at the treated area. However, the Agency believes that most farm and forestry employers will opt to warn employees orally. Signs that employers post must meet the same criteria as the signs for the mandatory treated-area posting.

The Agency also has been persuaded to eliminate the requirement that oral notification be given daily. Instead, employers are required to notify workers before the worker's first opportunity for exposure to any treated area. Regardless of whether the employer uses oral notification or posting, the Agency is requiring that application-specific and restricted-entry-specific information be posted at a central location accessible to all workers. This information will remind workers of areas where pesticides are being applied or where an REI is in effect. EPA is convinced that additional information about the pesticide application can be conveyed more effectively through these centrally located notice areas than through oral notification. Providing information about applications on printed cards is not a practical alternative to oral notification because of language problems and the cost of duplicating the information.

2. *Posting pesticide-treated areas.* Besides oral warnings, the Agency proposed to require the posting of warning signs in areas of farms and forests treated with pesticides having REIs greater than 48 hours, except when no workers would be in the area, as discussed above. The Agency also considered other posting options, such as for pesticides with REIs more than 24 hours.

Some comments supported the proposed posting requirements, but some stated that posting must be supplemented with oral notification, particularly on large farms and in forests where posting may be difficult.

Many comments advocated daily oral notification supplemented with mandatory posting so that persons working near the area or moving through the area are aware of the application and can avoid contact.

Some comments stated that areas treated with pesticides having REIs exceeding 24 hours should be posted because posting is an unequivocal way of communicating to workers their right and duty not to enter a treated field.

Some comments said that posting for all pesticides with an REI of greater than 24 hours would be more consistent with the purpose of the proposed rule than posting only for intervals greater than 48 hours. The latter, they said, would exempt nearly all pesticide applications from posting. They stated that oral warnings alone are inadequate for warning workers of the hazards of entry from products in toxicity categories I and II and suggested the requirement might be met by posting a map showing treated areas.

Other comments opposed any mandatory field posting requirement. One stated that workers could be notified by a centrally located information board.

The Agency has reviewed the comments on mandatory field posting and has decided to modify these requirements. The Agency has defined at least two objectives for posting of treated areas: (1) Warning of areas treated with pesticides that are so toxic that incidental exposure, i.e., contact from brushing against the treated surfaces, could cause an acute illness or injury and (2) warning of areas treated with pesticides for which a short exposure could have the potential for a delayed effect, such as developmental toxicity. The final rule requires posting for all pesticides that contain active ingredients that are classified as toxicity category I because of acute dermal toxicity or skin irritation potential. On a case-by-case basis, the Agency also may require posting for other pesticides that the Agency deems may produce adverse health effects from a short-term exposure.

The Agency will require that oral notification also be given to workers when posting is required so that a second tier of warning is provided for these pesticides. Pesticides meeting these criteria will have a statement in their labeling that the treated area must be posted and workers must be notified orally.

The Agency proposed that "When several contiguous areas are to be treated with pesticides on a rotating or sequential basis, the entire area may be posted." This would allow posting of a larger area than the treated area when a continuous spraying operation treats alternative rows or areas, rather than the entire area, on a sequential basis. Since posting of individual rows in this case would be difficult and expensive, the Agency would allow the entire area to be posted. However, no part of this entire area may be entered while signs are posted, except under the conditions specified in the regulation for early entry. The Agency has retained this provision in the final rule.

3. *Warning sign.* The Agency proposed a standard warning sign containing a stern-faced person with an upheld hand containing the words "DANGER - PESTICIDES - KEEP OUT."

Although the sign proposed by the Agency received some support, many comments requested modifications to the symbol or the wording. There were suggestions that the sign should contain the skull and crossbones or should use some international symbol.

After consideration of the comments, EPA remains opposed to the use of the skull and crossbones symbol for the reasons stated in the NPRM and because posting may be required by the Agency not only for the most acutely toxic pesticides but also for some pesticides in other toxicity categories. Acute toxicity is only one factor in determining what areas should be posted; posting will be required by the Agency on a case-by-case basis during registration, reregistration, or special review for pesticides presenting other types of risks. Furthermore, farm, forest, and nursery establishments may choose to post all pesticide applications, and greenhouse establishments must post all pesticide applications.

The Agency did not find an appropriate international symbol that it believed conveyed the desired message.

The Agency has not been persuaded that the basic design of the sign should be changed. The Agency is convinced that mandatory worker training will promote worker recognition and understanding of the sign proposed in the NPRM.

Some comments expressed concern that the words "Pesticides" and/or "Danger" make the sign too negative; others recommended that pesticide signal words such as "DANGER" or "CAUTION" be reserved for use with specific materials that carry relevant toxicity classifications. Some suggested that to use the word "DANGER" or the

skull and crossbones symbol on posting signs would be misleading and weaken the meaning of these signals where materials in toxicity categories III or IV might be involved.

Some comments requested that the signs be in as many languages as necessary to reflect the composition of the work force; others requested that additional information be required on the signs, such as the name of the pesticide, the date and time applied, and where toxicity information may be obtained.

The Agency is persuaded to change the wording of the treated area warning sign. The words "DANGER/PELIGRO," "PESTICIDES/ PESTICIDAS " and "KEEP OUT/NO ENTRE" will be required. The Agency realizes that Spanish/English signs cannot be read by all workers, but it is impractical to require printing in all the languages used by workers.

The Agency believes that removal of the words "Pesticides" and "Danger" from the signs would defeat the purpose of the signs. Changing the wording to reflect the signal word for the pesticide used would require the employer to have several sets of signs, which would be burdensome. The objective of posting is to keep workers out of an area under treatment, not to inform them of the type or degree of hazard.

Because the Agency believes that a generic treated-area sign is the most practical, economical, and reasonable choice, it will not require application-specific information to be listed on the sign. Such information may be added to the sign if the information does not interfere with the other components of the sign. Application-specific information will be required at the centrally located notification area.

The Agency proposed that warning signs be visible from all usual points of worker entry to the pesticide-treated areas, including each access road, each border with any labor camp adjacent to the pesticide-treated area, and each foot path and other walking route that enters the pesticide-treated area. When there were no usual points of worker entry, signs were to be posted in the corners of the pesticide-treated area or in any other location affording maximum visibility.

Several comments requested that posting also be used to protect other persons, such as persons who live in houses or labor camps adjacent to the fields and persons who may be passing by fields. Some comments advocated posting at specified distances along the perimeter of treated areas in addition to the usual points of access; others noted the difficulty in posting all entries to forested areas.

The Agency believes that "at the usual points of entry" is the most reasonable requirement for placement of the signs. Posting at specified intervals along the perimeter is unnecessary and burdensome. Labor camps within or adjacent to treated areas must be posted when posting is required for the treated area. Posting a warning sign at a central location is an inadequate replacement for the posting of treated areas. Although posting may be difficult for forestry operations, the Agency believes it is feasible to post at locations that may be considered usual points of access, such as at the place where logging roads enter a treated area.

The Agency also recognizes the concerns expressed about warning persons other than workers. While the intent of the rule is to protect agricultural workers, the requirement for posting treated areas will provide warning to other people who might enter the treated area inadvertently. The Agency intends to consider additional actions to deal with exposures not covered by these regulations. These include non-agricultural exposures, agricultural exposures excluded from these regulations, and exposures to the public.

4. *Notice of applications in greenhouses and nurseries.* In greenhouses and nurseries, the Agency proposed mandatory posting of all entry-restricted areas instead of oral notification, unless there are no workers in the area.

Some comments supported the requirement as proposed, stating that the requirement to post pesticide-treated areas seems fair in lieu of oral warnings. Others objected to the requirement because nurseries were singled out for more restrictive posting requirements than forests or farms.

The Agency has considered the various comments and has decided to retain the mandatory posting requirement for pesticide applications in greenhouses, but to change the requirement for nurseries. Although some nurseries are much like greenhouses with many crops grown in small areas, others more closely resemble farms. Therefore, the Agency is persuaded that nursery employers, like farm employers, should be permitted to choose between oral notification and posting pesticide-treated areas except when mandatory posting and oral notification are required by the labeling.

D. Personal Protective Equipment (PPE)

The predominant route of pesticide exposure in outdoor agricultural work is through the skin. Therefore, any barrier that can be placed between the employee and the chemical to reduce contact with the skin reduces the risk of pesticide poisoning. EPA concluded, in the proposal, that except for enclosed cockpits and enclosed cabs with positive-pressure filtration systems, the only other practical barrier available to pesticide applicators is PPE. For mixers and loaders, closed systems and technological advances in containers and packaging, such as water-soluble bags, have potential, but work is needed to perfect these approaches. The NPRM stated that PPE was the most practicable approach to reducing occupational exposure to agricultural pesticides.

The proposal required the use of PPE appropriate to the pesticide and the work activity. The proposal also required employers to provide, clean, and maintain such equipment.

Several comments stated that PPE should be the last resort for protection and that engineering controls should be explored first. Some studies of desirable methods of protection have concluded that PPE ranks below removal of employees from areas where they may be exposed, system design, and mechanical protection. Some comments stated that the proposed rule dismisses mechanical techniques of reducing or eliminating exposure as being unavailable or of limited utility and that this is in sharp contrast with other regulatory proposals developed by EPA and other Federal agencies which "force technology" by providing a lead time for nonmechanical solutions and then requiring the application of the "best available technology."

Unlike industrial environments, which are more controlled and confined, agricultural settings do not lend themselves as easily to engineering controls. The Agency is aware of the emergence of engineering controls suitable for agricultural situations and is considering the adoption of such controls on a product-specific basis during the registration, reregistration, and Special Review processes. Until adequate engineering controls are developed and tested, PPE will remain the primary means of mitigating exposure for agricultural pesticide handlers. The elimination of routine early entry for hand labor activities may "force" the development of engineering controls, such as mechanical harvesters.

weeders, and pruners, in crops where the timing of such tasks is critical.

Some comments requested that closed system mixing and loading and enclosed cab application be required for all toxicity category I pesticides to reduce employee injuries.

Some comments agreed with the proposed reduction of PPE requirements during use of closed mixing/loading systems. However, another comment requested that EPA not reduce PPE requirements for closed system mixing/loading. It stated that pesticides are highly corrosive and that the Agency has no program to inspect and certify such systems. The comment asserted that the efficacy of closed systems has been impaired by the failure of the Agency or the manufacturers to establish uniform specifications for container openings.

One comment stated that the regulation should contain incentives to develop low-risk transfer and cleaning options. Requiring the use of chemical-resistant gloves and aprons to transfer granules in a closed system will cause applicators to stay with more dangerous, but cheaper, conventional systems. Similarly, if self-cleaning mechanisms are provided for pesticide equipment, PPE requirements should be reduced.

Several comments requested that engineering controls such as wiper wands, low-pressure nozzles, and stream emitters be rewarded with reduced PPE requirements.

EPA considered requiring closed systems for mixing and loading all highly toxic pesticide concentrates. The Agency has decided to encourage the use of such systems by reducing the amount of PPE required when closed systems or enclosed cabs are used for mixing, loading, applying, or other handling activities, but it will not require the use of such systems. The Agency agrees that for closed systems to be most effective in reducing exposure, the kinds and types of equipment used in such systems and the maintenance of such equipment must be standardized. Such a program is beyond the scope of part 170 as proposed; the Agency is investigating several types of engineering controls and may require the use of such controls in the future. The Agency also agrees that "rewards" such as a reduction of PPE requirements are incentives for handlers to use engineering controls, but eliminating all PPE requirements during the use of closed systems does not seem to be prudent. A number of accidents are reported despite the use of closed systems.

One respondent requested that EPA require state-of-the art protective clothing for employees where appropriate; another was concerned that the Agency not establish excessively rigid requirements that would discourage use of improved knowledge or technology.

EPA intends to remain attentive to the development of innovative PPE and to adjust the PPE requirements as appropriate.

1. *Personal protective equipment (PPE) for early-entry workers.* The Agency proposed minimum PPE requirements, based on the acute toxicity of the active ingredient, for the protection of workers who enter treated areas before the expiration of an REI.

Several comments stated that early-entry PPE should be the same as the PPE required for handlers, presumably including respiratory protection. Another stated the Agency should have a better rationale for excluding inhalation toxicity as a hazard for workers entering fields after dusts have settled, sprays have dried, or vapors have dispersed.

The Agency intends to eliminate workers' respiratory exposure during application (which is defined as continuing until the pesticide is no longer being dispersed) by prohibiting workers from being in or near the treated area. The Agency has concluded that respiratory protection is not needed during the permitted entry after application.

Many comments recommended that no early entry be allowed, because workers will not use the PPE if the weather is too hot or will risk heat stress if they do wear the equipment. A few comments objected to PPE other than normal work attire for early-entry workers by expressing the belief that, in most cases, long-sleeved work shirts and long work pants provide adequate protection.

Several comments expressed dismay that no minimum PPE was established for early-entry workers in areas treated with pesticides in toxicity categories III and IV and recommended that early-entry PPE for these pesticides should be normal work attire plus chemical-resistant gloves because many of these chemicals are skin irritants. Others requested that coveralls and chemical-resistant gloves be the minimum PPE for early entry after all pesticide applications.

In the NPRM, there was a generic REI for pesticides in toxicity categories III and IV of "until sprays have dried, dusts have settled, or vapors have dispersed." Since the proposal contained a complete ban on hand labor activities during that period, there was no need to specify PPE for early entry for pesticides in toxicity categories III and IV.

In the final rule, the Agency has established a 12-hour REI in lieu of the generic "until sprays have dried, dusts have settled, or vapors have dispersed" and specifies minimum PPE for early entry for all pesticides.

The prohibition on most early-entry activities in the final version of part 170 has eliminated the need for most uses of early-entry PPE. For those exceptional circumstances when early entry is permitted, the Agency has decided to require early-entry workers to wear the PPE required for an applicator of the pesticide (with the exception of respiratory protection) for pesticides in toxicity categories I and II. The Agency has specified that the minimum attire for early entry for pesticides in toxicity categories III and IV will be coveralls, waterproof or chemical-resistant gloves, socks, and shoes. This minimum attire is based on the Agency's desire to have the body protection (coveralls) provided, cleaned, and maintained for the worker and on the Agency's belief that some early-entry workers may receive greater exposure to pesticides through residues in the treated area than handlers may receive during application. The Agency reserves the right to establish different PPE requirements for early-entry activities on a case-by-case basis if evidence supports such action.

The Agency does not believe that requiring PPE or "normal work attire" after the expiration of the REI is warranted. Where data indicate that such protection is needed, the Agency will establish such a requirement; however, it is more likely that the REI would be extended until the PPE would no longer be needed.

2. *Personal protective equipment (PPE) for pesticide handlers.* Ideally, each pesticide product labeling should list specific PPE reflecting the formulation, anticipated exposure level, and toxicity of the product. These determinations are made or are refined as products are registered or reregistered. However, the Agency acknowledges that many pesticide labels require PPE for handlers that is inadequate by the Agency's present standards. The Agency proposed to establish PPE requirements until appropriate product-specific requirements can be established. Registrants would be required to list the requirements on the labeling for each pesticide product. In this final rule, the Agency is establishing, through parts 156 and 170, minimum requirements for PPE for handlers of all agricultural pesticides in various exposure situations.

Handlers, such as those mixing, loading, and applying pesticides and those involved in flagging, repairing, adjusting, changing, or cleaning equipment face potentially dangerous levels of exposure to pesticides unless adequate protection is used. The risk of exposure is especially high for handlers who perform all these tasks and for persons, such as commercial pesticide handlers, who perform these tasks frequently.

Results of numerous studies indicate that more than 97 percent of the pesticide to which the body is exposed during handling (especially during spray applications) is deposited on the skin. The hands and forearms account for the highest percentage of total dermal exposure. For ground applicators, mixers, and loaders, respiratory exposure constitutes a small percentage of total exposure in outdoor handling operations unless highly volatile formulations are involved. Respiratory exposure cannot be ignored in outdoor applications, however, since nearly 100 percent of any pesticide that enters through the lungs and gastrointestinal tract is absorbed. When pesticides are used in enclosed structures, the risk of respiratory exposure is greater than when pesticides are used outdoors.

a. *Basis for the requirements.* The Agency considered whether the toxicity category of the formulated product was the appropriate basis for the PPE requirements for pesticide handlers. When the formulated pesticide product is diluted by the user, the resulting solution may be less toxic than the concentrated formulated product. When EPA establishes product-specific PPE requirements during registration or reregistration, it uses any available registrant-supplied data on the acute toxicity of the diluted product to determine the appropriate PPE for exposure to the diluted product. The Agency proposed to base the requirements on the toxicology of the formulated product. By submitting data on the toxicity of the diluted pesticide product, however, registrants could reduce the PPE requirements for handlers, except for mixers and loaders who would be exposed to concentrates.

The Agency proposed that handlers of pesticides that are in toxicity category III or IV because of acute dermal or skin irritation potential be required to wear "normal work attire" (long-sleeved shirt, long pants, shoes, and socks). For pesticides that are in toxicity category III because of dermal toxicity or skin irritation potential, handlers also would be required to wear chemical-resistant gloves. For pesticides that are in toxicity category III or IV because of inhalation toxicity or eye irritation potential, the Agency proposed no minimum PPE requirements, but reserved the option of requiring PPE for those hazards on a product-specific basis as warranted by evidence.

Most comments supported the Agency's proposal to base PPE requirements on the toxicity of the formulated product and the Agency's use of a table to determine the appropriate attire for a pesticide product.

Some comments recommended that PPE for applicators be based on the toxicity of the dilute product; another requested that PPE be based on the type of formulation as well as the acute toxicity. One comment stated that toxicity should not be the sole determinant of PPE and that use pattern and mode of action must be considered.

This regulation allows registrants that have data on the toxicity of the dilute product to use that data in establishing the PPE requirements for handlers exposed to the diluted product. However, basing PPE on the type of formulation, the use pattern, or the mode of action is best accomplished on a product-specific basis during the case-by-case review of a product. Therefore, the Agency will not consider these factors in establishing the generic PPE requirements for pesticide handlers in part 156.

b. *Types of personal protective equipment (PPE) required*—i. *Body protection.* In the current regulations, "protective clothing" is defined as "at least a hat or other suitable head covering, a long-sleeved shirt and long-legged trousers or a coverall-type garment (all of closely woven fabric covering the body, including arms and legs), shoes and socks." The Agency now deems this clothing inadequate to protect either handlers or workers entering treated areas before the expiration of the REI.

In the NPRM, the Agency proposed minimum PPE requirements that would vary according to: (1) The acute toxicity of the pesticide, (2) the type of employee activity, (3) route of exposure, and (4) the presence of engineering controls. Under the proposal, all handlers and early-entry workers exposed to pesticides in toxicity category I or II because of either dermal toxicity or skin irritation potential would be required to wear a protective suit over normal work attire.

Some comments requested that chemical-resistant protective suits be required for handling all pesticides in toxicity categories I and II, especially for airblast applications. One comment requested a change in the definition of "protective suit" to include suits made of nonwoven materials.

The Agency has changed the term "protective suit" to "coverall" and changed the definition. "Coverall" means any loose-fitting one- or two-piece garment that covers, at a minimum, the entire body except the feet, hands, and head.

The Agency considered requiring the use of a chemical-resistant protective suit when handling pesticides in toxicity category I (acute dermal), but was persuaded that two layers of clothing provide adequate protection. To minimize dermal exposure to pesticides, protective garments must be worn to cover any body area(s) of concern. Cotton or cotton and polyester, i.e., woven fabrics, are preferred for work clothing because they are more comfortable to wear, and they can be washed. Appropriate protective coverings, such as coveralls, can reduce the exposure to pesticide users' trunk area, arms, and legs by 99 percent. One study concluded that the use of rubberized clothing did not provide more protection than the regular work clothing (consisting of cotton shirts and trousers worn under long-sleeved coveralls). The final rule, however, allows users to wear a chemical-resistant protective suit as an alternative to the two layers of clothing. The development of various types of disposable chemical-resistant garments made of nonwoven materials, such as Tyvek (spunbonded olefinic fibers), gives pesticide users a wide choice of protective materials.

Most comments on the requirement to wear a protective coverall over another layer of clothing asked the Agency to reconsider; objections centered on the problems of heat-related illness and discomfort associated with wearing two layers of clothing in the summer months. One comment stated that if a protective suit is worn and becomes contaminated, it can be discarded and replaced with a clean suit on site, whereas if the normal work attire becomes contaminated, the worker may have to return home in contaminated clothing.

Numerous comments stated that the more uncomfortable protective clothing becomes, the more likely it is that employees will avoid wearing the protective clothing or the more likely they will not complain to the appropriate authority about the lack of protective clothing in the event the employer fails to furnish such clothing. Another comment stated that, in an emergency, stripping the coverall off

quickly, washing, and putting on the extra coverall that is required to be kept at the decontamination site would be more protective than a false sense of security brought by two layers of clothing.

Some comments stated that convincing handlers to wear a coverall and chemical-resistant gloves would be a major breakthrough in PPE and that a requirement for two layers of protection might discourage any compliance.

The Agency considered the comments on the requirement for handlers and early-entry workers to wear a long-sleeved shirt and long pants under a coverall in activities involving pesticides that are in toxicity category I or II because of dermal toxicity or skin irritation potential. A review of the literature revealed several studies supporting the concept of layering as an effective protective system; the protection afforded by protective clothing is proportional to the thickness and the closeness of the weave.

The Agency recognizes that the use of PPE in hot, humid working conditions may lead to heat stress and discomfort. But the alternative of requiring the use of a single-layered chemical-resistant suit would not solve these problems. The Agency does not consider a coverall without an additional layer of clothing to be protective for pesticides with an acute dermal toxicity value in toxicity category I or II. The Agency does recognize, however, that pesticides in toxicity category I present a greater hazard and risk than those in toxicity category II. Therefore, the Agency will require either a chemical-resistant protective suit or a coverall worn over a long-sleeved shirt and long pants when handling pesticides classified as toxicity category I for dermal toxicity or skin irritation. For handling pesticides classified in toxicity category II for dermal toxicity or skin irritation, a chemical-resistant protective suit or coveralls worn over a layer of clothing that covers the trunk area (e.g., T-shirts and shorts) is specified.

Many comments agreed with the proposed PPE requirements for "normal work attire," which was defined as long pants, a long-sleeved shirt, shoes, and socks, for handlers of pesticides in toxicity categories III and IV. But several other comments requested that more than "normal work attire" be required for handlers of pesticides in toxicity categories III and IV.

The Agency has considered the comments regarding the PPE required for handling pesticides in toxicity categories III and IV and has determined that the PPE proposed is adequate to protect handlers of these pesticides. The Agency has written the PPE requirements to create an incentive for users to choose less acutely toxic pesticides whenever possible.

Several comments requested EPA to clarify that its intent was to establish "normal work attire" for pesticide-handling activities and not for all work on agricultural establishments.

To eliminate the confusion, the phrase "normal work attire" is not used in the final rule. PPE and other clothing required for handling the pesticide will be specified on pesticide labeling.

ii. *Hand protection.* Dermal exposure of the hands and forearms is the most significant route of pesticide exposure for hand laborers, applicators, mixers, loaders, and other persons who are exposed occupationally to agricultural pesticides and their residues. It has been estimated that chemical-resistant gloves can reduce hand exposure by as much as 98 percent.

The Agency proposed to require chemical-resistant gloves for all early-entry and pesticide handling situations involving pesticides that are in toxicity categories I, II, or III because of dermal toxicity or skin irritation potential. (No gloves were required for early-entry or pesticide handling situations for pesticides in toxicity category IV). Leather gloves, uncoated cloth gloves, and fingerless gloves are not acceptable, because liquid and particulate pesticides can penetrate them. The Agency considered an exception for early-entry workers handling roses, because sturdy, flexible glove materials such as leather will withstand the wear and tear from thorns while providing sufficient dexterity.

Few comments discussed glove materials. The greenhouse industry asked to be permitted to wear leather gloves while working with roses and other thorny plants.

The Agency has determined that multiple-use cotton gloves and cotton-lined gloves are not acceptable for use in pesticide handling or early entry because they are difficult to decontaminate after use. If suitable puncture-resistant and chemical-resistant gloves are not obtainable, the Agency will allow the use of leather gloves for working in thorny plants, with two restrictions: (1) Chemical-resistant glove liners must be worn, and (2) leather gloves that have been worn once for protection from pesticide exposure shall thereafter be worn only with chemical-resistant liners.

A few comments stated that either the pesticide registrant or EPA should give more specific guidance on how to determine which glove materials are chemical-resistant to specific pesticide formulations.

The Agency concurs and has developed a guidance package for pesticide users on the selection, use, and maintenance of chemical-resistant gloves. The final rule requires registrants to specify in the product labeling the appropriate type of gloves to be used with the product. EPA will continue to cooperate with the American Society for Testing and Materials to develop testing criteria for chemical resistance in gloves and to sponsor research into the chemical resistance of various glove materials.

iii. *Foot protection.* The feet may be exposed to pesticides from spills, splashes, or downward sprays, and from walking through vegetation after application while sprays are still wet. The Agency proposed to require chemical-resistant footgear for handlers and workers entering areas treated with pesticides in toxicity category I or II (dermal/skin irritation).

A few comments stated that wearing chemical-resistant footwear can be uncomfortable and may cause a foot disease similar to trench foot. Many comments urged the Agency to reconsider the requirement for chemical-resistant footwear in forests, stating that leather boots are worn for traction on rocks and debris, protection from pests and snakes, and for durability. The comments stated that the safety hazards of working in this environment increase if chemical-resistant boots or boot covers are required.

Because of the problems inherent in decontaminating non-chemical-resistant footwear, the Agency will continue to require the use of chemical-resistant footwear for pesticides in toxicity categories I and II (dermal toxicity or skin irritation). However, the Agency is persuaded by the comments that for physical safety, pesticide handlers and early-entry workers in rough terrain should be permitted to wear leather boots if chemical-resistant boots of sufficient traction and durability are not obtainable.

iv. *Eye protection.* The eyes and face may be exposed whenever there is a chemical splash or a high level of mists, vapors, or dusts during mixing, loading, and applying pesticides or whenever residues are dislodged from foliar surfaces above the head of the worker. The Agency proposed to require the use of goggles or a face shield by all handlers and early-entry workers exposed to pesticides with toxicity category I or II eye irritation potential. Goggles or a face shield also would be required during mixing and loading

using pressurized closed systems because of the high risk of exposure and serious eye injury if the system ruptured.

Many comments pointed out that goggles and face shields are uncomfortable during prolonged use in hot weather and that there should be some provision for employees who wear eyeglasses. Others commented that for most pesticides and use circumstances, several styles of eye protection provide near goggle-level protection at greatly increased levels of wearer comfort and with less tendency to fog.

The Agency is persuaded that safety glasses with protective shields at the eyebrows and temples provide adequate eye protection in most pesticide handling and early-entry situations. Because they are more acceptable than goggles to employees, they would be more likely to be used. The regulation, therefore, has been modified to require the use of "protective eyewear" in handler and early-entry situations involving pesticides in toxicity categories I and II for eye irritation. When "protective eyewear" is required, the employer shall provide goggles, a face shield, or safety glasses with side shields and brow guards.

For products in toxicity category I for eye irritation, the Agency may, on a case-by-case basis, require the labeling to include a requirement for the use of goggles or a face shield.

v. *Respiratory protection.* The Agency proposed to require handlers and other workers who enter treated areas before vapors have dispersed to wear respiratory protection devices approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA), if the pesticide is in toxicity category I or II for inhalation toxicity. The Agency did not propose to require respiratory protection for handlers of pesticides with inhalation toxicity classified in toxicity category III or IV or for workers entering treated areas after pesticide vapors have dispersed.

Several comments pointed out that although several types of respirators have NIOSH/MSHA approval for protection against pesticides, NIOSH does not test respirators for individual pesticides. Therefore, requiring "a NIOSH- or MSHA-approved respirator" does not assure the use of the most appropriate respirator for a specific pesticide. The comments also noted that the NIOSH instructions that accompany air-purifying respirators refer the user to the pesticide label for limitations of use. Some comments urged the Agency to require pesticide manufacturers to provide respirator instructions in the product labeling.

Most comments urged the Agency to require respirator fit-testing before a respirator is used and a physician's approval that the handler's physical condition will permit him/her to use a respirator safely. One comment stated that the use of forced air respirators would eliminate some of the fitness and fit testing problems.

Several comments suggested that the selection, use and maintenance of respirators be consistent with the program described in the OSHA standards (29 CFR 1910.134) and/or that the specific recommendations be provided in the Agency's rule.

The Agency agrees with the comments regarding the need for a comprehensive respirator use program encompassing selection, correct use, and appropriate maintenance of respirators. EPA has developed a guidance document on the use of respirators in agriculture. The language in the final rule offers some guidance on changing filters, cartridges and canisters in the absence of direction from the manufacturer; part 156 requires the registrant to specify what type of respirator should be used with a product that requires respiratory protection for handling.

c. *Exceptions to personal protective equipment (PPE) requirements.* The Agency has retained the requirements proposed for aerial applicators. Pilots in enclosed cockpits will not be required to wear PPE. Pilots in open cockpits must wear the PPE required for a ground applicator of the product in use, except that chemical-resistant footwear is not required, and a helmet with visor may be used in lieu of a hat and protective eyewear. Pilots in both types of equipment must wear the protective gloves required by the labeling when entering or exiting a plane whose exterior is contaminated by pesticide residues.

The Agency proposed that pesticide handlers in the enclosed cabs of ground vehicles should be exempt from PPE requirements. If the enclosed cab did not contain a properly functioning gas- or vapor-removing ventilation system, any labeling requirement for a respirator would be in effect, but all other PPE would be waived. Fully enclosed cabs without air filtration have been shown to reduce dermal (but not respiratory) exposure substantially for airblast applicators. The Agency was concerned, however, that heat buildup in unventilated enclosed cabs might lead applicators to open windows for comfort, which would negate the benefit of the enclosed cab. The Agency specifically sought comment on this issue. The Agency also was concerned about the possibility of handlers leaving the enclosed cab in the treated area, becoming contaminated, and then returning to the enclosed cab. Therefore, EPA proposed that all PPE required for a ground applicator of the pesticide must be available for use any time the handler leaves the cab in the treated area.

Most comments expressed concern that applicators in cabs without ventilation will open the window on a warm day, thus negating the cab's protection.

Many suggested that full PPE should be required for operators in an enclosed cab without ventilation. One comment noted that there is no way to eliminate the need for handlers to leave the cab in the treated area; since protective clothing must be worn, employers will use this as an excuse for not providing protective cabs. An equipment manufacturer commented that their studies have shown that contaminated clothing (gloves on the steering wheel or dash, etc.) is a major source of chemical contamination inside cab enclosures.

The Agency acknowledges the potential for defeat of the enclosed cab's protection by opening windows or by contaminating the interior of the cab with clothing or equipment containing pesticide residues. However, EPA supports the use of engineering controls in lieu of PPE where feasible; an enclosed cab used correctly is protective. The Agency is aware that pesticide applications in many regions of the country take place where discomfort from heat is not a factor, even in enclosed cabs. The Agency is aware also of many situations where the applicator is not the mixer or loader or the person who repairs or adjusts the application equipment, and therefore would not be required to change into or out of PPE for these activities. Under these conditions, it would be inappropriate to require PPE in the enclosed cabs. Therefore, the Agency continues to waive the PPE requirements, with the exception of any respirator requirement, for applicators in enclosed cabs. If the windows of the cab are opened at any time during the application or the enclosure is otherwise breached, the cab is no longer considered enclosed, and applicators would be required to wear the PPE required on the pesticide labeling for applicators of the product.

Users must wear PPE when leaving the cab only if they will contact pesticide-treated surfaces in the treated area. They may leave the cab for a rest stop or other reason (other than

handling pesticides) without wearing PPE if they will not be in contact with pesticide-treated surfaces in the treated area. The applicator may leave the cab and walk away from the just-treated area without PPE.

The Agency is concerned that the interior of the enclosed cab may be contaminated from pesticide-contaminated clothing worn or taken into the cab. Therefore, the Agency changed the language of the rule to prohibit such an action. Once PPE is worn in the treated area, it may not be worn into or taken into the cab.

A few comments concurred with the Agency's proposal to waive the use of all PPE, including respirator, if the enclosed cab has a properly functioning, positive-pressure ventilation system that removes vapors from the air. The Agency based its proposal on studies indicating that positive-pressure, charcoal- filtered ventilation systems on enclosed cabs can remove more than 99 percent of pesticide vapors and sprays during air intake. Other comments stated that enclosed cabs were unproven as protection for airborne hazards and that data are needed that demonstrate the effectiveness of the protection offered by an enclosed cab.

The Agency believes that incentives should be used to encourage the use of engineering controls instead of PPE when such technology exists. In the final rule, persons occupying an enclosed cab that has a properly functioning ventilation system, which is used and maintained in accordance with that manufacturer's written operating instructions and which is declared in writing by the manufacturer or by a government agency to provide respiratory protection equivalent to or greater than the respirator required by the pesticide labeling, may substitute a long-sleeved shirt, long pants, shoes and socks for labeling-specified PPE.

d. *Duties relating to personal protective equipment (PPE).* The Agency proposed that all PPE required by the pesticide product labeling for a particular work activity be provided to handlers and early-entry workers and that the employer clean and maintain such equipment.

In the final rule, EPA has modified the language to clarify who is responsible for fulfilling the various requirements and provisions. This section now specifically states that the employer shall provide the appropriate PPE in clean and operating condition. This provision does not prohibit handlers who own PPE, such as a respirator, from using that equipment. The employer, however, would be required to assure that such equipment is cleaned and maintained. The employees would not be allowed to wear home or to take home the equipment unless it had been cleaned first.

A few comments indicated uncertainty about who would provide "normal work attire" (long-sleeved shirts, long pants, shoes, and socks) when it is required by the labeling and whether it is considered to be PPE. The Agency does not include normal work attire in the definition of PPE; therefore, it is not part of the employer's responsibility to provide or maintain this attire.

The Agency perceives the appropriate decontamination of PPE as a major area of concern. Significant levels of some pesticides can remain in clothing or equipment if it is not laundered correctly or if prescribed decontamination procedures are not followed. Surveys of pesticide users, especially agricultural workers, indicate that a large percentage do not follow any precautionary procedures when cleaning contaminated clothing and equipment. If PPE is reused without cleaning or laundering, the protective effect may be reduced or eliminated. Therefore, the Agency has determined that it is appropriate for the employer to assure that PPE is cleaned and maintained properly before it is reused.

The proposal required that after each use all PPE be washed thoroughly with detergent and hot water or be cleaned according to the manufacturer's instructions and that it either be dried thoroughly before being stored or be placed in a well-ventilated place to dry. The Agency also proposed that PPE be stored away from pesticide-contaminated places and be stored separately from personal clothing to avoid contamination of either clean PPE or clean personal clothing.

A few readers interpreted the proposal as requiring laundry facilities on-site (on the farm, forest, or nursery, or in the greenhouse). It does not.

Several comments said EPA did not provide sufficient guidance for the implementation of the proposed cleaning and maintenance provisions. Two comments questioned appropriate decontamination for chemical-resistant protective clothing and equipment; fabric clothing can be laundered daily, but chemical-resistant suits are expensive and are damaged by constant laundering in hot water. One was concerned that conventional washing of chemical-resistant suits may result in low-level contamination of the inside surfaces that might not occur otherwise. It suggested modifying the language to state that chemical-resistant suits, hats, boots, and gloves need not be washed or cleaned daily, but must be kept in a condition of cleanliness consistent with employee safety.

Several comments questioned the conditions under which the employee may be permitted to wear or to take home "normal work attire" that has become contaminated. To prevent these situations, some comments advocated that the employer should be responsible for cleaning and maintaining "normal work attire," i.e., long-sleeved shirts, long pants, shoes, and socks worn during handling or early-entry activities when it is specified on the labeling.

Several comments from the forestry industry asserted that it was awkward to clean and maintain PPE in typical forestry situations. Some of these requested that PPE and laundry requirements be eliminated for pesticides in toxicity categories III and IV and for diluted pesticides in toxicity categories I and II.

The Agency has studied the comments on this issue. As stated above, normal work attire is not considered to be PPE; thus, the employer has no responsibility to provide it. However, EPA is concerned about employees' wearing or taking home pesticide-contaminated clothing or equipment, regardless of whether the clothing is provided by the employer or by the employee. The Agency, therefore, is inclined to require that employers clean and maintain any attire an employee wears while handling pesticides or performing early-entry tasks. However, such an option was not discussed in the NPRM, and the economic impact of such a requirement has not been assessed. The Agency must study the costs and logistics involved in such a requirement and may publish a proposal on this issue for public comment at a later time. Although it would be prudent for employers to clean and to maintain pesticide-contaminated work clothing for their employees, it is not a requirement of this final rule.

If a pesticide used in forestry requires the use of PPE, such equipment must be cleaned and maintained by the employer. This cleaning and maintenance need not be done on the employer's premises or immediately following use. EPA left flexibility in the requirement to allow for employers to collect contaminated PPE and to clean it at their convenience at a location of choice. Therefore, forestry employers could provide their handlers (and early-entry workers) with a clean set of PPE for each day of handling activities and provide a chemical-resistant container that could be securely fastened, such as

a sturdy plastic bag, for storing the contaminated PPE until it is cleaned.

EPA's directive to wash PPE in hot water and detergent is the alternative when there are no directions from the manufacturer on how to clean and maintain equipment. The goal is to remove pesticide residues as completely as possible so that the equipment is clean the next time it is used. Evidence indicates that non-chemical-resistant clothing and equipment, as well as many chemical-resistant items, should be cleaned in hot water and a heavy-duty detergent to remove pesticide residues most efficiently. If manufacturers of chemical-resistant gloves, boots, or protective suits indicate another method of cleaning and maintaining the equipment, it must be followed.

EPA proposed that persons responsible for cleaning the PPE would be informed that the equipment might be contaminated with pesticides. Only a few comments were received on this issue. One comment requested that any person cleaning the PPE be required to provide written verification that he has been warned of the hazards.

EPA concurs with the sense of the comment and has rewritten the rule to require the employer to inform persons who clean or launder PPE or other pesticide-contaminated items of the possibility that such items may be contaminated with pesticides and of the potentially harmful effects from exposure to pesticides. The employer must also inform these persons of the appropriate procedure(s) for handling and cleaning such items.

Some comments requested more specific guidance as to who would be responsible for inspecting the PPE before each day of use. A few suggested that the inspector be a certified applicator; others suggested that training on the appropriate inspection of PPE would be beneficial.

It is the employer's responsibility to assure that the PPE is maintained properly, and this includes inspecting the PPE for damage and other defects. This may be done by the employer, by a designated supervisor, or by the employees if they have been instructed in the care and cleaning of PPE. The Agency believes that it is not practical in many agricultural situations to require a certified applicator to inspect all PPE before each day of use.

EPA concurs that information on procedures for inspecting PPE would be useful. The Agency has developed a guidance brochure on the maintenance and inspection of PPE such as protective eyewear, gloves, protective footwear, chemical-resistant protective suits, hats or hoods, and coveralls.

e. *Heat-related illness (heat stress).* Although chemical-resistant suits are not part of the minimum PPE proposed by this regulation, they are required by the labeling for a few pesticides. The NPRM prohibited tasks requiring chemical-resistant suits where a combination of temperature, humidity, and time required to complete a task might be expected to cause heat-induced illness. The onset of these illnesses depends on a variety of factors, and EPA expressed the belief in the NPRM that users could be expected to anticipate when work activities might result in heat stress.

Many comments expressed concern about the risk of heat stress in agriculture with respect to the use of PPE when handling pesticides in warm climates, stating that guidance and training were central to enabling employers and employees to prevent heat-related disorders. Nearly every comment disagreed with EPA's assumption that the employer could ascertain when heat-related illness was a risk and asked EPA to give guidance about the conditions that would warrant limiting work due to heat stress concerns.

Some comments stated that it is inappropriate and unfair to ask employers to make decisions about heat-induced illness, a complicated and potentially life-threatening condition; farmers and ranchers have no training in health care. The comments stated that the employee should be trained to recognize the early signs and symptoms of heat-induced illness and be permitted to take work breaks, remove chemical-resistant suits (in a clean area), seek medical attention, or take other reasonable measures to alleviate those symptoms.

A few comments requested that PPE not be used or that the protective suit be permitted to be unzipped during applications when the applicator was upwind of the spray. Some comments stated that environmental conditions in some States or regions make wearing any PPE a problem because of extreme heat or humidity.

A few comments requested that specific temperature and humidity guidelines be established.

The National Institute for Occupational Safety and Health offered some recommendations for reducing heat stress when PPE is required.

EPA has determined that heat-related illness is a potential problem with the use of many types of PPE. Therefore, the Agency has modified the language in the rule to state that the employer should use appropriate precautions to prevent heat-related illness (§ 170.240(g)). EPA has developed a guidance document that addresses recognition, prevention, and treatment of heat stress under agricultural working conditions. This document can be used by employers to determine suitable measures for preventing heat-related illness, as required by the rule.

EPA also believes that training handlers and early-entry workers to recognize the early warning signs and symptoms and to implement appropriate first-aid measures for heat-related illness will help to minimize the risk of such illnesses. Thus, EPA has modified the requirements for the training programs for handlers and the instructions for early-entry workers to include information about heat-related illness.

The establishment of specific temperature and humidity limits was determined to be inappropriate, because they are only two of several factors that contribute to the onset of heat-related illness. The Agency is persuaded that employers may be able to complete necessary pesticide handling activities, even in very warm weather, by acclimating handlers and early-entry workers, providing plenty of drinking water, modifying work schedules and work/rest cycles, and using portable cooling devices.

E. Decontamination

The Agency proposed that water, soap, and single-use towels be available during any work activity where there is potential employee contact with concentrated or diluted pesticides or with surfaces that have been treated with pesticides.

For pesticide handlers and early-entry workers, decontamination facilities would be required at all times since these activities have the greatest risk of exposure. For persons working in treated areas after the REI has expired, the Agency proposed to limit the requirement to activities in areas that have been treated during the current growing season.

Many comments questioned the need for decontamination facilities during an entire crop cycle, stating that a time should be specified.

The Agency believes that there is a need for decontamination facilities after the end of the REI. The Agency recognizes, however, that some pesticides may have been applied long before workers enter the area. EPA agrees with the comments that suggested that the proposed requirement might be excessive, and it sought to determine what might be a reasonable

time during which decontamination facilities should be available.

Knaak, Iwata, and Maddy, in a 1989 investigation of a series of pesticide poisoning incidents that occurred after the expiration of an REI, found that the median time from application in these incidents was 29 days. The Agency has studied more recent data regarding the incidence of multiple-case systemic illnesses of agricultural field workers from exposure to residues of organophosphates in California. Among the 44 incidents for which data were provided, the mean length of time from application to poisoning was 20 days, with a median of 16 days. The range was from less than 1 day to 66 days, although this latter figure was an outlier and did not appear to be well substantiated. Excluding parathion (no longer registered for most crops) and this outlier, the longest period between application and reentry poisoning was 39 days. The Agency believes that poisoning incidents that occur more than 30 days beyond the REI probably stem from a miscalculation in establishing the REI that is listed on the labeling.

As part of the Pesticide Hazard Assessment Project funded by EPA in 1985, a computer model was developed to estimate how long hazardous residues might persist. For one of the pesticides studied the hazard was predicted to remain for 30 days after the REI had expired. The Agency is seeking to corroborate and refine this model. In the meantime, the Agency believes it should institute a safety factor in the Worker Protection Standard to compensate for this potential variability.

In response to the comments, the Agency has modified the language in the final rule to require decontamination facilities for workers entering a treated area for which an REI is in effect and for workers entering a treated area within 30 days after the expiration of the REI.

The NPRM also stated that the water shall be potable, in adequate supply, at a temperature that will not injure the eyes, and reasonably accessible to each worker's place of work.

There were many comments about the proposed rule's reference to potable water. Those supporting the requirement for potable water said that OSHA requirements for field sanitation already require potable water in the fields. Comments from representatives of the forestry industry pointed out that potable water might not be available to forestry workers working in areas with no vehicular access.

Those opposing the requirement for potable water stated that farm wells are not required to meet the Safe Drinking Water Act requirements, so it is unreasonable to expect water supplied from a farm to meet this standard for quality. In their comments on the draft final rule, under FIFRA section 25(a), the U.S. Department of Agriculture (USDA) stated that the decontamination provisions of the draft final rule would be unreasonably burdensome to employers because of the requirement for potable water for handwashing purposes. They stated that the standard for potable water is higher than necessary for washing purposes and that clean water should be sufficient. Clean water, they suggested, would be readily available from farm and irrigation wells, whereas potable water may not be. USDA believes that changing the decontamination provisions to permit the use of clean water would greatly reduce the burden and expense to farm employers without significantly reducing worker protection. They suggested that an appropriate standard might be the regional or local standard for water safe for swimming.

As stated in the NPRM, the Agency proposed the standard of "potable" for the quality of water for two primary reasons:

(1) "OSHA's Field Sanitation Standard (29 CFR 1928.110) requires potable water in the fields for hand laborers, intended not only for washing but also for drinking purposes. Even though EPA's proposed requirement was intended to provide water only for washing, in practice the water may be used by workers for drinking as well."

(2) "[O]nly 'potable' water can be defined in such a way that noncompliance can be clearly ascertained."

At the time of the proposal, EPA believed that since OSHA uses the potable water standard for its Field Sanitation Standard, it would be easier for employers to comply with one water standard than with two. However, EPA was reminded by commenters that approximately 89 percent of agricultural establishments are not currently covered by OSHA's Field Sanitation Standard and that EPA should be responsive to the burden to employers on those establishments.

EPA has been persuaded by the comments that a standard of "potable" may impose a substantial burden to agricultural employers, without a concomitant benefit to workers. EPA believes the goal of this requirement should be to ensure that workers and handlers will be provided with water that will not cause illness or injury when it contacts their skin or eyes and will not cause illness or injury if they should happen to swallow it. Thus, the Agency has been persuaded to eliminate the requirement for "potable" water and instead has required the provision of water that meets the stated performance standards. This will permit employers to equip decontamination sites with water which is used for drinking on the agricultural establishment, but which may not meet the standard of potability in the Notice of Proposed Rulemaking.

In reexamining the options, EPA considered establishing the quality standard of "clean" water defined as water safe for swimming. However, the Agency was unable to ascertain how agricultural employers would be able to apply such a standard. In adopting a standard of water quality different from a potability standard, EPA remains concerned that in practice, some workers may drink the water, especially if no alternative source of drinking water were available in the field. Moreover, the Agency has concluded that water must be of a quality safe for drinking because (1) workers and handlers may accidentally swallow water in the process of washing/flushing their faces or eyes, and (2) workers and handlers may mistake wash water for drinking water. EPA believes that placarding water to indicate that it is not for drinking purposes would be a difficult and unwieldy requirement given the range of languages and degree of illiteracy among workers. EPA concurs with OSHA's stance in the preamble to the Field Sanitation Standard that they "would like to eliminate the use of signs in several languages to identify different classes of water quality in the same workplace and the errors that occur when water supplies are confused."

The Agency believes that defining decontamination/eyeflush water, in part, as water that "will not cause illness or injury if swallowed" will allow enforcement officials to ascertain noncompliance. EPA expects that the water used for drinking purposes on the agricultural or handler establishment will usually be the source of water for washing and eyeflushing. EPA notes that those establishments currently complying with the requirement for providing potable handwashing water to workers under OSHA's Field Sanitation Standard would also be in compliance with the EPA requirement for decontamination water if the same water were used. It is important to note, however, that EPA is not exercising any statutory authority in this rulemaking to address the general sanitation hazards addressed by the OSHA Field Sanitation Standard.

The Agency recognizes the difficulty in providing decontamination sites for employees working in areas with no vehicular access and is modifying the decontamination requirements for

activities performed more than 1/4 mile from the nearest place of vehicular access. For these remote work sites, the required decontamination site may be located at the nearest place of vehicular access, instead of within 1/4 mile of each worker or handler. Workers and handlers may use clean water from springs, streams, lakes, or other sources for routine and emergency decontamination at the remote work site, if such water is more accessible than the decontamination water located at the nearest place of vehicular access. The Agency has concluded that, in such circumstances, the risks from the use of water of uncertain quality are likely to be less than the risks from delay in removing pesticides or pesticide residues from the skin or eyes.

Some comments stated that "reasonably accessible" needs definition. Numerous comments suggested that decontamination sites should be no greater than 1/4 mile from employees. Others noted that the restricted-entry area is where contamination may occur, that decontamination sites should be made available there, and that water in a tank is protected in a treatment area.

The Agency believes that the language of this requirement should be consistent with the language of the OSHA Field Sanitation Standard requiring that the decontamination site must be reasonably accessible, not to exceed 1/4 mile or approximately a 5-minute walk from each worker's place of work. As a result, the rule has been revised to include a specific distance requirement of 1/4 mile. For agricultural workers, the decontamination site must not be in an area under an REI. For early-entry activities, the decontamination site may be in the area where the employees are working. For application activities, the decontamination site may be in the area being treated if the soap, single-use towels, and clean change of clothing are in enclosed containers and the water is running tap water or is enclosed in a container.

The Agency proposed that an eyeflush dispenser be provided during handling and early-entry situations involving a product that is a severe eye irritant, i.e., toxicity category I or II for eye irritation, signified to the user by a requirement for protective eyewear on the labeling. The dispenser would be immediately available for emergency use, e.g., it would be carried by the handler or on the handler's vehicle. The Agency solicited comment on whether the dispenser needs to be available during all activities or only certain ones, whether each employee should carry a dispenser, and whether carrying a 1-pint dispenser on one's person represents undue weight burden.

The comments supported the requirement for requiring eyeflush dispensers for mixers and loaders. Several comments stated that eyeflush equipment should be available for all employees, but that not all workers need to carry eyeflush dispensers; only handlers have such a need. Again, language such as "otherwise immediately accessible" was thought to be vague. One comment included a copy of an OSHA Field Directive that cautions about the possibility of contamination of eyeflush water by *acanthamoebae*. Some comments suggested that if a pesticide is a hazard to eyes, it is best if each person carries a dispenser, but if that is not possible, a full pint for each 2 or 3 persons should be made available. Several comments noted that eyeflush containers carried by employees may be contaminated by pesticides.

The Agency is concerned that the language of the proposed rule may have led to some misconception about what water may be used for flushing the eyes in case of emergency. The decontamination water that must be provided for routine washing and emergency whole-body cleansing must not cause illness or injury when it contacts the eyes. Therefore, the Agency has added "emergency eyeflushing" as one of the basic functions to be met by that water. EPA wants to make clear that while special eyeflush dispensers may be used, any source of water that meets the standards for decontamination in the final rulemaking is acceptable for flushing the eyes. In appropriate instances, the language of the rule has been altered to change the requirement from "eyeflush dispenser" to "eyeflush water." In addition, these requirements have been combined in this final rulemaking to avoid confusion.

In response to comments about workers and handlers who need more immediate access to eyeflush equipment, the Agency requires that the emergency eyeflush water shall be carried by the handler or early-entry worker, or shall be on the vehicle or aircraft which the handler or early-entry worker is using, or shall be otherwise immediately accessible. Again, EPA wants to make clear that this water does not necessarily have to be in a dispenser. Any nearby source of adequate amounts of water meeting the definition of decontamination water satisfies this requirement.

The Agency is persuaded of the importance of protecting against bacterial and other types of contamination of the water used for washing and eyeflushing. Therefore, the final rule will require employers to assure that "at all times when the water is available" to workers and handlers, it will remain of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed. The agricultural employer and handler employer will be responsible for making sure that the water is replaced and the container is cleaned often enough to prevent bacterial or other contamination that could cause illness or injury to employees using the water for washing or eyeflushing. In most circumstances this would mean replacing water in containers at least daily and regular cleaning of those containers.

F. Emergency Assistance

EPA proposed that all employees be informed of the name, address, and telephone number of the nearest physician, clinic, or hospital equipped to provide medical care in a pesticide poisoning or injury emergency. This information was to be displayed in a prominent location on the agricultural establishment at all times.

In pesticide poisonings or injury emergencies, the victims may be unable to transport themselves to the nearest medical facility. Therefore, EPA proposed that prompt transportation to an appropriate medical facility be made available when there is reason to believe that a worker or a handler has been poisoned or injured by a pesticide. In a possible pesticide poisoning or injury, the most effective medical care can be provided only through a correct diagnosis and prompt administration of the appropriate antidote or treatment. A doctor must know the name of the product or active ingredient to which the worker or handler has been exposed to ascertain the appropriate treatment. Thus, EPA proposed that in an emergency, workers and handlers be provided, if available, the product name, registration number, active ingredient(s), and first aid or antidote information and other information about the use of the pesticide and possible exposure to the worker or the handler. This information is available to pesticide users from the labeling of the product or from their knowledge of the product; the requirement to provide information did not require that the user maintain records or keep pesticide labels or containers.

In their comments on the draft final rule, under FIFRA section 25(a), the USDA stated that EPA needed to clarify when the employer is responsible for making available to the worker prompt transportation to an appropriate emergency facility. USDA stated that they interpret this provision to be applicable only while the employee is on the employer's property. EPA agrees and has clarified in the rule that the agricultural employer must provide such transportation when a worker is on the employer's establishment, including in any labor camp located on the establishment. The Agency has similarly clarified in the final rule that the handler employer must provide emergency transportation when a handler is at the place of employment or at the handling site.

The Agency found no other information among the few comments on this requirement to cause it to reconsider other aspects of the requirement; they remain in the final rule essentially as proposed.

G. Pesticide Safety Training and Information

Based on the conviction that training and information are essential components of a successful risk-reduction strategy, the NPRM proposed several requirements related to providing pesticide safety training to handlers and information to workers: (1) General pesticide safety information for workers through a poster to be displayed in the work place, (2) pesticide safety training for handlers and early-entry workers, (3) labeling-specific information to handlers, and (4) labeling-specific information to workers on request.

1. *General pesticide safety information*—a. *Poster.* The Agency proposed to require that general pesticide safety information be displayed on a poster in a prominent location on each agricultural establishment during the growing season. The poster would contain statements concerning pesticide hazards and recommended safety practices, the location of emergency medical care facilities, a sample of the warning signs used for posting treated areas, and statements concerning the rights and duties of employers, supervisors, and workers. All information would appear in English; if some workers read only another language, the poster either would be translated into that language or contain a statement in that language recommending that the workers have someone explain the information to them. Workers would be informed of the location of the information and would be allowed reasonable access to it.

The Agency considered whether other methods of communicating this information to workers, such as oral instructions or a training program given either by employers or by other providers, would be more effective than a poster, and asked for comment on this issue.

Most comments favored a requirement for a pesticide safety poster. There were specific criticisms focused on the proposed content of the poster. Some comments stated that the language was too forceful; others criticized the language for not being emphatic enough. Some comments requested that the poster have definitions of the signal words used on labeling.

There were several comments concerning the location of the poster. One suggested that more than one poster be displayed per establishment; another recommended that pesticide users distribute information sheets to their workers to avoid intimidation and retaliation should workers attempt to study the information presented on a poster.

Some comments pointed to the difficulty of posting information at forest work sites and requested flexibility to post at the crew headquarters or assignment area.

The final rule maintains the requirement for agricultural employers and handler employers (other than employers on commercial pesticide handling establishments) to display pesticide safety information in a poster format at a central location, with some modification of the proposed requirement. Although the final rule also requires that workers and handlers receive oral or audiovisual training in pesticide safety, the Agency believes that, at least for workers who are literate, a pesticide safety poster will serve as an important reinforcement and reminder of the information learned in the training program. A poster also will provide a convenient place in the workplace to make note of specific emergency medical information, i.e. telephone numbers and addresses.

The Agency concurs with many of the comments concerning linguistic complexity, emphasis, and other aspects of the proposed pesticide safety poster. It has decided that the exact wording and format do not belong in part 170 because changes may be needed as EPA and others gain new information about pesticide safety. In lieu of requiring the employer to display specified items of information, EPA is requiring that general topics be covered in simple, emphatic language. EPA intends to publish a poster designed to address many of the concerns raised in the comments and intended to meet the part 170 requirement. Employers may use the EPA poster or a poster of similar content that meets the requirements of part 170. The Agency will make such a poster available through numerous distribution sources and will encourage other organizations to produce similar posters.

The final rule permits employers of forestry workers or handlers to display the poster at a place other than the forest work site, as long as it is reasonably convenient for workers or handlers and they are informed of the location. EPA does not believe that it is necessary for employers to distribute this information to workers or handlers in written form. EPA believes that the requirement as worded makes it clear that only one poster need be displayed per agricultural establishment, even if there are several work sites, e.g., more than one greenhouse or field, as long as each employee has access to it. EPA has made no changes to the employer's duties to maintain the poster in legible condition and update the emergency medical care information as necessary.

EPA has been convinced by comments that requiring the items of information on the poster to be translated is impractical. Since the purpose of the poster in the final rule is to reinforce worker or handler training, which must be given in a manner the worker or handler can understand, the requirement for translation has been dropped.

b. *Training for agricultural workers.* The Agency's request for comment on the most appropriate method for conveying basic pesticide safety information to workers stimulated many responses. The comments strongly supported some combination of oral, audiovisual, and written training in pesticide safety for all agricultural workers who may be exposed to pesticides or pesticide residues. Comments favoring training for all workers came not only from worker advocates such as unions and legal and health service providers, but also from universities, chemical companies, State lead agencies and other State agencies, growers, and grower organizations. A Farm Bureau chapter stated that it supported a one-time instruction given for employees, i.e. at harvest or at time of employment.

The comments stated that employers need to convey safety information to all workers orally because workers cannot or will not read written materials; oral instruction and training are the most

effective means to communicate information.

The few comments opposing training for workers were concerned about the logistics of doing the training, but did not oppose the concept of such training. In their comments on the draft final rule, under FIFRA section 25(a), the United States Department of Agriculture stated a concern about requiring training for agricultural workers before their first work period. They state: "In effect, the training provision will require that an employer provide training at the beginning of the season, and then, each time an additional worker or replacement worker is hired. . . . Given the extremely high variability and turnover within labor intensive agricultural work groups (1,000 percent is not uncommon), this procedure . . . would frequently result in virtually continuous training of small groups of new hires by each employer."

The Agency believes that providing information about ways to avoid or to mitigate occupational exposure to pesticides will reduce pesticide-related illnesses and injuries among agricultural workers significantly, and it has been convinced by the public comments that training as well as displaying a poster will better convey this information. A poster may be effective in conveying a simple message, but training more effectively conveys larger amounts of information. Reliance on a poster also presents problems relating to language literacy, and accessibility. Many agricultural workers go directly to the work site, rather than to a central location; these workers would have neither the opportunity nor the incentive to examine a poster. For workers not literate either in English or their native language, adding a paragraph to the poster in any language advising them to have the poster explained to them would do little good. From the comments, EPA has concluded that an oral or audiovisual training program is an essential complement to a poster in communicating pesticide safety information to workers, and therefore such a requirement is a necessary component of worker protection standards.

Although training each worker involves more employer effort than displaying a poster, the Agency has determined that the burden will not be significant. In their comments, many employers noted that they train their workers in pesticide safety, either because they feel it is important, or because they believe they are subject to the OSHA Hazard Communication regulations.

EPA has developed videotape and slide-tape training programs in English and in Spanish. The Agency intends to update these materials to correspond to the requirements of the final rule. These updated materials may be used by employers, the Cooperative Extension Service, State agencies, health care providers, and others; employers may obtain and use the training materials themselves or make arrangements to have workers trained by others.

The final rule has been modified to include a training requirement for workers. The modified rule requires agricultural employers to assure that before the 6th day that any worker enters any areas on the agricultural establishment where, within the last 30 days, a pesticide has been applied or an REI has been in effect, the worker receives pesticide safety training. For the first 5 years after the effective date of the rule, however, the rule allows employers up to the 16th day that any worker enters any areas on the agricultural establishment where, within the last 30 days, a pesticide has been applied or an REI has been in effect, to assure that the worker receives pesticide safety training. The Agency's intent is that workers receive training as soon as is practicable in each work situation, but not necessarily before their first exposure. In most instances, the Agency believes that whenever permanent employees and crews of employees are hired, the training could take place before the new-hires' first exposure period.

The longer time period (approximately 3 work-weeks for the first 5 years and approximately 1 work-week thereafter) allows agricultural employers more flexibility in arranging for training of workers they employ. Such flexibility will be most useful for establishments where there is frequent turnover in the workforce, such as with large crews of seasonal labor, or where one or more of the workers do not understand either English or Spanish and a person who can translate the training to such workers must be located. After the 5-year period, most of the existing agricultural workforce already should be trained and only workers new to agriculture will need to be trained. In addition, by the end of the 5-year period, agricultural employers should have access to training materials and translators in the necessary languages. Therefore, beginning 5 years from the effective date of the revised final WPS, workers must be trained before their sixth day of entrance to areas where, within the last 30 days, a pesticide has been applied or an REI has been in effect.

The 6th (or 16th, as applicable) day of entry is not limited to a growing season or calendar year. It is the 6th (or 16th) day of exposure beginning when a worker enters areas on the agricultural establishment following a treatment with a pesticide to which the Worker Protection Standard applies. To avoid keeping track of such workers' days of exposure, two options are available to the agricultural employers. First, they can make sure that all workers are trained before their first exposure in such areas. Second, they can hire only those workers who have already received training and who possess a valid training certificate.

The Agency is also attempting to mitigate repetitive training by establishing a relatively lengthy (about 20 months) lead time before the training provisions of the final rule are enforceable. This lead time will allow a substantial number of workers to be trained in the interim. Once a large percentage of workers have been trained, the concern about repetitive training diminishes, because many new hires already will have received training.

The risks from pesticide residues decrease as the time increases between application and entry into treated areas. The Agency recognizes that in some circumstances or under some conditions residues might remain as long as 30 days after the end of an REI. Workers who enter the areas after that time have little to gain from the use of exposure-mitigation techniques. As a result, a grower who applies a preplant herbicide in March and uses no other pesticide treatments during the growing season would not be obliged to train workers who are hired to harvest the crop in October. Therefore, the Agency has chosen to require training for workers who enter an area where, within the last 30 days, a pesticide has been applied or an REI has been in effect.

All early-entry workers must be trained before they are allowed to enter an area before the REI has expired. Workers must receive training before they are allowed to enter treated areas before the expiration of an REI to perform tasks permitted under § 170.112 and involving contact with anything that has been treated with the pesticide, including, but not limited to, soil, water, or surfaces of plants, because EPA believes that their risk of exposure is higher than that for workers entering after the expiration of the REI.

Workers and early-entry workers must be given the specified training in

pesticide safety, unless they: (1) Satisfy the training requirement for pesticide handlers under this regulation, (2) satisfy the training requirement under part 171 of this chapter, or (3) are currently certified private or commercial pesticide applicators.

The training program must be presented in a manner the worker can understand, using nontechnical terms. The general pesticide information must be presented either orally using written materials, or audiovisually. As a minimum, the person conducting the training must have been trained as a pesticide handler under part 170.

The training may be presented using a translator or through sign language, if the employer assures that the worker can understand the information being presented. The fact that an employer does not normally provide training in the particular language of a job applicant, or that translation services are not readily available, does not absolve an employer of his training responsibilities under the WPS. Employers who provide training under the WPS should be cognizant that a refusal to hire an applicant who is unable to understand the language or languages in which the employer usually provides training may constitute discrimination on the basis of national origin. Discrimination on the basis of national origin is actionable under Title VII of the Civil Rights Act of 1964 or under the Immigration Reform and Control Act of 1986 (IRCA). There is also a possibility that the failure of an employer to provide training in any language and, instead to consistently require current training certificates from applicants for those jobs whose activities require WPS training, could thereby be causing a disparate impact which could, under some circumstances, be interpreted as constituting discrimination based on national origin. Employers desiring information regarding their responsibilities under Title VII of the Civil Rights Act of 1964 or the anti-discrimination provisions of the IRCA may contact the Equal Employment Opportunity Commission or the Special Counsel for Immigration Related Unfair Employment Practices of the U.S. Department of Justice, respectively.

The training programs for workers must include the same basic information as those for handlers, except for topics that are relevant only to handlers. For example, worker training need not include information related to the format and meaning of pesticide labeling or to transportation, storage, and disposal of pesticides. Worker training must include information about the worker protection requirements of part 170 such as application and entry restrictions, the posting of warning signs and the design of the warning sign, oral warnings, the availability of specific information on applications, and protection against retaliatory acts. This will ensure that workers know what protection they should be receiving so they can encourage compliance with part 170.

The final rule requires that workers be retrained at 5–year intervals, measured from the end of the month in which the training is completed. The Agency believes that such renewal of WPS worker training will be adequate to convey the basic pesticide safety precepts to workers and to provide timely updates and reinforcement, without undue burden. The presence of the required pesticide safety poster in the workplace will serve as a reminder of pesticide safety practices for workers whose training may have occurred some time in the past.

In their comments on the draft final rule, under FIFRA section 25(a), USDA expressed concern about the absence of a formal mechanism to avoid repetitive training of each new hire on each agricultural establishment and welcomed the opportunity to work with EPA to develop such a verification program. A change to the rule was made. The rule now states that if the agricultural employer determines that a worker possesses an EPA-approved WPS training certificate and has no reason to believe it is invalid, that determination shall meet the requirements of assuring that the worker has been trained. The revised final rule requires trainers to assure that appropriate WPS training has been given to a worker before the training certificate is issued.

EPA expects that a wide variety of groups would be qualified to conduct WPS training and issue EPA-approved training certificates, including grower or commodity organizations, pesticide dealers, worker advocacy or interest groups, or others.

The use of an EPA-approved WPS training certificate is optional. The Agency encourages those trainers who, voluntarily, would like to maintain records or issue cards to workers to do so.

EPA and USDA intend to establish a joint task force to develop and implement a mechanism for verification of training. The task force would seek to reduce the amount of duplication in training and to establish a voluntary system of training verification. Once the mechanism for verification of training has been determined, the Agency will issue guidance regarding the specific nature of the verification system. Such guidance is expected to include the following topics: (1) Criteria that the Agency will use for determining which persons or agencies will distribute the training certificates to prospective trainers; (2) description, format, and content of the training certificate; (3) mechanism for ascertaining the expiration of the training certificate; (4) content of the certification statement that prospective trainers would have to sign in order to receive the training certificates.

2. *Training for handlers.* The Agency proposed that general pesticide safety training would be required for all persons who are employed to handle pesticides intended for use on agricultural crops on farms or in forests, nurseries, or greenhouses. This requirement would be waived if the handler were certified as a private or commercial applicator. Each handler was to be instructed by a trainer who met certain minimum qualifications. The training program also had to meet minimum standards.

Many comments noted that EPA's handler training was similar to the training in chemical hazards required by OSHA's Hazard Communication Standard and questioned whether both requirements were necessary. There was concern that the apparent duplication of OSHA's Hazard Communication Standard may cause confusion for the growers and regulatory agencies.

EPA acknowledges that there may be some confusion regarding the relationship between the training required by the OSHA Hazard Communication Standard and by this standard and is working with OSHA to define more clearly the roles of the two agencies in hazard communication for pesticides users. For additional information on this topic, see EPA's proposed amendment to 40 CFR part 170 published elsewhere in this issue of the **Federal Register.**

Most comments on the training requirements for handlers supported the concept of such training. However, a few comments opposed any training requirement for pesticide handlers because they thought private applicator certification for all persons who handle agricultural pesticides would be burdensome and impractical.

EPA does not intend to require private applicator certification for all who handle agricultural pesticides, but the Agency does believe it is important that all persons who handle agricultural

pesticides have training in basic pesticide safety.

Some comments that strongly supported the concept of handler training had reservations or criticisms regarding specific provisions of the training requirements.

A few comments stated that being certified should not exempt handlers from being trained under part 170, noting that the proposed handler training requirements exceed the private applicator certification requirements in some States.

The Agency acknowledges that there may be variation among the States in the content and effectiveness of certification programs. EPA is revising the certification regulations (40 CFR part 171) to upgrade the national "core" requirements for certification of private and commercial applicators. When the revisions to part 171 are promulgated, all State certification programs for pesticide applicators will be required to contain the components of the upgraded national "core" requirements. The Agency is confident that all State certification programs then will meet or exceed the minimum requirements for training of pesticide handlers contained in part 170.

Several comments said that training should be specific to the task being performed, not general pesticide safety training and that, like labeling, training should fit the toxicity of the substance.

EPA is not persuaded that job- or product-specific instruction by supervisors is an effective substitute for basic pesticide safety training. The Agency is convinced that pesticide handlers will be more willing to observe job specific safety instructions and to cooperate in hazard reduction provisions, such as using PPE, if they are informed of the reasons for such provisions. Therefore, this final rule retains the requirement for general pesticide safety training for all pesticide handlers.

Some respondents questioned where to find information required for the training program, especially regarding spill cleanup and chronic health effects.

EPA intends that the training programs for pesticide handlers stress basic principles of safe pesticide handling. Pesticide-specific information is required to be furnished to each handler before each handling task. EPA intended that the information on health effects should focus on types of possible health effects, such as acute and chronic effects, delayed effects, and sensitization (allergic effects), that may be associated with pesticide exposure, not on product-specific effects. Information in the training program regarding pesticide spill cleanup would be limited to the generally accepted three-step procedure of containment, removal, and disposal. Information on how to dispose of a specific spilled material will not be included in the general training program. Any handler assigned to clean up a spill would need to have any information on the pesticide labeling regarding spill cleanup procedures, precautions, or requirements specific to that product. If no specific information is listed on the pesticide labeling, the employer has no requirement under this part to seek out additional spill-specific information or instructions.

The Agency is supportive of those who want to train handlers beyond the minimum requirements in part 170 and encourages such initiatives. EPA is developing a new regulation regarding the appropriate procedures for disposal of pesticides and pesticide containers. When the rule is promulgated, the information is expected to be incorporated into pesticide labeling and can be conveyed to the handler on a product-specific basis.

The handler also must be informed of any pesticide-specific warnings or information regarding any health effects listed on the labeling of the pesticide being handled.

One comment questioned the relevancy of environmental information in worker protection training. The Agency believes such training is relevant to worker protection. Many environmental concerns are applicable not only to the organisms in the environment, but also to workers and other persons who may be in that environment. Ground and surface water warnings, for example, are designed to protect not only aquatic organisms, but also workers and other persons who may be using the water for drinking, cooking, bathing, etc. The Agency notes that FIFRA defines "environment" as including "water, air, land, and all plants and man and other animals living therein, and the interrelationships which exist among these."

A number of comments suggested that handlers receive instruction concerning the part 170 handler protection requirements so they can assist in protecting themselves and be aware of noncompliance. One comment said that the training should cover the anti-retaliation provisions of the regulation and employees's rights to file complaints.

EPA agrees with these comments and has added such a subsection to the training requirements.

In § 170.230, EPA has made some modifications to the content of the training program in addition to those discussed above. The topics have been reordered, and some have been combined. Several subsections have been rewritten to improve their clarity. A subsection has been added requiring instruction in the recognition and avoidance of heat-related illness associated with the use of PPE.

The Agency's proposal to require a trainer to be a certified private or commercial applicator or to be designated by a State or Federal agency as a trainer of certified applicators received considerable attention.

Some comments objected to permitting certified applicators, especially private applicators, to run training programs. Being certified has no bearing on competency to train others in pesticide safety, they maintained, and this provision may lead to unqualified persons providing training. Comments also said that trainers should be required to attend a continuing education course on how to instruct pesticide handlers.

A number of comments requested that other people who meet EPA requirements be permitted to run training programs for handlers or that the trainer should not be required to be a certified applicator. They pointed out that many agricultural professionals could do such training, such as county cooperative extension agents, university professors, consultants, and properly trained supervisory personnel.

Several respondents stated that a trainer was not necessary at all; employees handling pesticides could be given written information on pesticides to meet training requirements, if the handler is able to read. Another comment said that States should determine how training will be done.

The Agency continues to believe that the physical presence of a person to run the program and to respond to the questions of participants is critical to the success of the training. EPA will require the presence of a trainer since many of those needing training may have little formal education and may not be able to read and comprehend written materials without help. The Agency is aware that some States have developed successful training programs for certified applicators that do not require the presence of a trainer. EPA will allow States to adopt training programs that are more comprehensive than the Federal program. If any State wishes to establish an autotutorial program accompanied by some measurement of understanding, EPA will review the program to determine whether it is as

comprehensive as the program required by this regulation.

After considering these comments, the Agency has decided that the most relevant trainer qualification is previous training in pesticide use and safety. Certified applicators, whether private or commercial, would have some knowledge and experience in pesticide handling; with the assistance of written and audiovisual materials they should be able to respond to most questions on this topic. The Agency believes that most agricultural establishments either employ a certified applicator or contract for the services of a certified applicator in the course of business. Therefore, the Agency does not expect that a large number of people will need to obtain certification to act as trainers under this part. The Agency also does not envision or promote the idea that agricultural employers will use the certification system as an alternative to this handler training requirement.

A person designated as a qualified trainer of certified applicators or pesticide handlers by a State, Tribal, or Federal agency having jurisdiction is eligible to be a trainer under part 170. EPA is also persuaded by the comments that stated that a trainer could be a person who has completed a train-the-trainer or continuing education course. In the final rule, the Agency has modified the trainer qualification requirement to specify that a person who has completed a pesticide safety train-the-trainer course is eligible to be a trainer of handlers under this part.

EPA did not propose to require verification of training, because it was concerned that this could be considered a requirement for private certified applicator recordkeeping—a requirement specifically prohibited by FIFRA section 11.

Some comments expressed the view that section 11 of FIFRA prohibits the Agency from issuing regulations requiring recordkeeping by private applicators.

A number of comments urged some type of training verification with mandatory recordkeeping. Some suggested cards be issued to trained handlers; others suggested that the trainer be required to maintain records of training program participants. Many comments were concerned about the lack of recordkeeping requirements. They stated that without verification of training, violations will occur, enforcement will be difficult, and employees will be trained more than once.

Some comments argued that requirements to keep records of worker training would not be prohibited by FIFRA section 11, claiming that a requirement for persons acting as trainers to keep records of trainees would not be the imposition of a recordkeeping requirement on a private applicator who voluntarily chose to act as a trainer.

Several comments suggested eliminating private applicators as trainers since they cannot be required to keep records and suggested that only certified commercial applicators should be eligible to conduct this training because they could be required to keep records.

EPA did not propose recordkeeping requirements in the proposed rule because of possible concerns that such recordkeeping might be inconsistent with section 11 of FIFRA. The Agency has concluded that section 11 does not prohibit the Agency from requiring trainers, including trainers who happen to be private applicators, to keep records verifying any training they give under part 170. Because the Agency did not propose a recordkeeping requirement for trainers in the proposed rule, however, EPA is not adopting any such requirements in the final rule. If experience under the final rule indicates that recordkeeping would be warranted, EPA will revisit this issue.

Although the training provision may be difficult to enforce in some cases without written verification, the Agency will seek enforcement of the provision and expects that the compliance rate will be high enough that significant risk reduction will be accomplished.

In their comments on the draft final rule, under FIFRA section 25(a), USDA expressed concern about the absence of a formal mechanism to avoid repetitive training of each new hire on each agricultural establishment and welcomed the opportunity to work with EPA to develop such a verification program. A change to the rule was made. The rule now states that if the handler employer determines that a handler possesses an EPA-approved WPS training certificate and has no reason to believe it is invalid, that determination shall meet the requirements of assuring that the handler has been trained. The revised final rule requires trainers to assure that appropriate Worker Protection Standard training has been given to a handler before the training certificate is issued. As described under the section about worker training, EPA and USDA intend to establish a joint task force to develop and implement a mechanism for verification of training. The task force would seek to reduce the amount of duplication in training and to establish a voluntary system of training verification.

The use of an EPA-approved WPS training certificate is optional. The Agency encourages those trainers who, voluntarily, would like to maintain records or issue cards to handlers to do so.

Some respondents misinterpreted the proposed rule's silence on the issue of frequency of handler training to indicate that retraining before each handling episode was necessary; others assumed that training was required either annually or upon initial employment each year.

Numerous comments raised questions such as when and how often training should be done. Some suggested it should be a one-time instruction conducted at the beginning of the growing season or at the time of employment; others wanted to see training required annually or more often.

The Agency did not specify in the NPRM how often pesticide safety training must be conducted. However, the final rule requires training for handlers to be renewed at least once every 5 years, measured from the end of the month in which the training is completed. The Agency believes that such renewal of WPS handler training will be adequate to convey the basic pesticide safety precepts to handlers and to provide timely updates and reinforcement, without undue burden. Mandatory annual retraining of the same employees presenting general information that typically does not change over the course of a year would be a burden on employers.

EPA intends to develop model training programs that will facilitate compliance with part 170. The Agency's plans in this respect are discussed in more detail in Unit VI of this preamble. Although the Agency expects that most pesticide safety training will be conducted using materials developed by EPA, it does not believe that this must be the only source of training materials. On the other hand, some assurance of the adequacy of privately developed materials is desirable. The final rule specifies the minimum content for such materials (§ 170.230).

H. Knowledge of Labeling Information

1. *Access to labeling.* The Agency proposed that any information from the labeling of any pesticide that is being used be provided upon request to the handler. This requirement was intended to provide handlers with product-specific pesticide safety information that will increase their ability to protect themselves and others.

Some comments stated that product-specific information is important but

that handlers may be too intimidated to request the information from the supervisor or employers.

Some comments suggested that the Agency delete the access-to-labeling provisions because the OSHA Hazard Communication Standard has been expanded to include agricultural employees. One recommended that the rule be changed to allow growers to retain either the pesticide label or the Material Safety Data Sheet (MSDS).

EPA has amended this section (§ 170.232) to address these concerns. Handlers must read or must be informed of, in a manner that they can understand, all labeling requirements related to the safe use of the pesticide such as signal words, human hazard precautions, PPE requirements, first aid instructions, and any additional precautions relating to the handling activity. In addition, the handler must have access to the labeling at all times during the handling activity in case a question arises about the use requirements. This does not mean that multiple copies must be made and carried with each handler, but that the product container itself or a copy of the labeling must be available in a place where it may be consulted if necessary.

The Agency believes that almost all respondents supported its intended goal, which was to assure that all handlers, including those working in an assisting or nonsupervisory capacity, are aware of the product-specific instructions for the pesticide being handled. If handlers are not aware of labeling requirements, it is more likely the product will not be used in accordance with labeling, a violation of FIFRA. In this regard, a MSDS is not an adequate substitute for product labeling. Although an MSDS may contain useful information about the safe handling and storage of the material and the risks associated with exposure to the material, it will not address all the enforceable use requirements on the pesticide labeling. The Agency considers that giving instructions in the relevant labeling requirements would assure this awareness and that reading the labeling also would be adequate. EPA agrees that handlers may be intimidated from requesting the labeling, and that even if a request is made, the labeling may not be read or understood.

2. *Labeling information for early-entry workers.* The Agency did not propose that early-entry workers have access to labeling information.

Some comments noted that early-entry workers would need product-specific information to have knowledge of the specific hazards associated with their early-entry assignment and that it would be appropriate for early entry workers to have access to the labeling.

EPA agrees that it is essential for workers who enter a treated area before the expiration of an REI to have job and product-specific instructions in pesticide safety. Therefore, the Agency has added language under the entry restrictions in the subpart on agricultural workers. This language provides that before being allowed to enter a treated area during the REI, the workers either must read the product labeling or must be informed in a manner that they can understand of all labeling requirements related to human hazards or precautions, first aid, symptoms of poisoning, PPE specified for early-entry, and any other labeling requirements related to safe use.

3. *Product-specific information for workers.* The Agency proposed to require that product-specific information be provided to workers, on request, for all treated areas subject to notification, beginning on the day the pesticide is to be applied and continuing at least until the expiration of the REI. The required information included: (1) The specific location and description of the area treated or to be treated, (2) the brand name, active ingredients, and EPA registration number of the pesticide used, and (3) the restricted-entry interval. In the NPRM, the Agency stated that it considered requiring this information to be displayed at a central location, such as a notice board, or to be written on warning signs.

Few comments were opposed to providing this information. Most were critical of the requirement as written, however, and recommended posting the information at a central location. Numerous comments were opposed to any requirement that compels workers to request information, because workers are too intimidated to request information from the employer, fearing that such a request could jeopardize their jobs.

The Agency is convinced that workers must have unhampered access to product-specific information about the pesticides to which they are exposed occupationally. The Agency was persuaded by the comments that some agricultural workers may be intimidated and that oral communication of this information may be complex and inconvenient. The Agency has amended this section to require employers to list the product-specific information in a central place on the agricultural establishment and to allow workers unimpeded access to this information. The information must include: (1) The location and description of the treated area, (2) the product name, (3) the EPA registration number, (4) the active ingredient(s) of the pesticide, (5) the time and date the pesticide was applied, and (6) the REI for the pesticide.

While the Agency acknowledges the similarity between this requirement and requirements of OSHA's Hazard Communication Standard, EPA will not require that an MSDS or similar fact sheet be made available, because such a requirement was not proposed in the NPRM. EPA and OSHA are committed to cooperating, within the constraints of their respective statutes, to minimize confusion and to avoid duplication of the requirements of the two agencies.

EPA has prepared a notice of proposed rulemaking to amend the WPS that requests comments on the feasibility and utility of requiring that MSDSs or fact sheets be made available to agricultural employees. This NPRM is being published in this issue of the **Federal Register**.

I. Other

1. *Cholinesterase monitoring.* EPA proposed that commercial pesticide handlers exposed to toxicity category I or II organophosphate pesticides for 3 consecutive days or for any 6 days in a 21–day period be monitored for cholinesterase inhibition. The Agency solicited and received comments on: (1) The types of employees to be monitored and, in particular, whether the requirement should be extended to private handlers, (2) the length of exposure (whether a more sensitive "trigger" with fewer days exposure would be more appropriate), and (3) the difficulties, costs, and advantages of day-based and symptom-based triggers.

Although some comments stated that only commercial handlers had sufficient exposure to warrant monitoring, many comments stated that private pesticide handlers also may have sufficient exposures to warrant cholinesterase monitoring and that this requirement should apply to all handlers. Some comments stated that applying the requirement only to commercial handlers creates a double standard for protection that is not supportable. Several comments supported the inclusion of all agricultural employees in a medical monitoring requirement because the cholinesterase monitoring requirement of the proposal afforded no protection for early-entry workers or other workers. Other comments stated that a medical monitoring program for all employees would be unnecessary and impractical.

A few comments stated that cholinesterase monitoring was unnecessary because of all the other requirements being initiated with part

170. Some suggested that cholinesterase monitoring be an option rather than a requirement; voluntarily implemented programs probably would be more successful than imposed programs.

Most respondents supported the Agency's proposed "trigger" of 3 consecutive days or any 6 days of exposure in a 21-day period. Some, however, stated that while a day-based trigger may be of use in detecting adverse health effects over time, it is of limited use in addressing accident situations or brief overexposure; a symptom-based trigger is too ill defined for use as a regulatory tool and could be confusing to both the employer and the supervising physician as to its applicability. One comment stated that a trigger based on hours (rather than days) of exposure would be a more rational way of including the highly exposed. Some comments suggested alternative triggers. A few reviewers stated that the Agency had given no rationale for the trigger chosen and asked how it had been determined. One suggested that determining the ideal trigger would have to wait until more data were available. Some comments suggested eliminating a trigger and requiring the testing on a preset schedule.

Many comments, both those for and those against a cholinesterase monitoring requirement, expressed concern about the recordkeeping that would be necessary to implement a monitoring program and to follow migratory and seasonal workers.

Some comments opposed monitoring because of the cost. Two comments included estimates that monitoring would cost $70 per test or $200 to $400 per employee over the growing season, exclusive of the costs of recordkeeping and additional physician fees. Others noted that lost work time and cost of transporting handlers to a physician's office where the test could be performed would be a burden to employers. In some remote rural areas, the testing would necessitate long-distance travel to the nearest qualified physician. One comment warned that the expense of the test and the time off work probably would result in this regulation being ignored. In contrast, another comment stated that the reduced medical disability costs among handlers would easily outweigh the costs of implementing a monitoring program.

Numerous comments expressed concerns regarding the validity and the reliability of cholinesterase testing methods, the availability of qualified laboratories to support a cholinesterase monitoring program, and the sufficiency of most physicians' knowledge about the toxicity of pesticides and ability to interpret the results of cholinesterase tests properly.

The Agency is concerned about many of the problems of cholinesterase monitoring, including the difficulty in finding knowledgeable physicians to set up monitoring programs and qualified laboratories to perform the analyses. The comments noted that a quality control program for laboratories would be needed nationwide if a monitoring program were to be successful. EPA is not prepared to establish such a program nationwide at this time.

The Agency believes that despite the practical difficulties associated with a nationwide program, the monitoring of employee exposure is a prudent occupational health practice and encourages employers wishing to operate such programs. To facilitate voluntary programs, the Agency has required that pesticides that contain cholinesterase-inhibiting compounds be identified as such in the labeling of the product. The Agency also is interested in cooperating in research or evaluations that might be done on new or existing exposure monitoring programs.

The Agency is concerned, however, that even reliable blood-level cholinesterase monitoring often would not prevent pesticide poisoning incidents. Blood samples are taken at intervals—weekly, biweekly, or monthly—during the exposure season; the handler may accumulate enough exposure between samples to become ill. In addition, the delay between sampling and the evaluation of the test results is such that most handlers will receive more exposure before the test results are known. Before such a monitoring system can indicate that handlers should be removed from further exposure to cholinesterase-inhibiting pesticides because their blood cholinesterase levels are dangerously low, the handlers may have received enough additional exposure to precipitate acute poisoning.

EPA is troubled by the reactive nature of available cholinesterase monitoring methods. The Agency would prefer to explore methods of monitoring exposures to cholinesterase-inhibiting pesticides, and perhaps to other pesticides, which are more likely to be preventive. One promising approach involves immunoassay-based detection. Immunoassay techniques could provide rapid, simple, and cost-effective monitoring methods for exposure monitoring systems under field conditions. It is expected that inexpensive kits can be developed that will yield quantitative results in less than 30 minutes, thus enabling more frequent monitoring and rapid response if unacceptable exposure is indicated. This technology could provide an effective means of signaling to the pesticide handler when exposure is unacceptably high.

EPA has determined that more research is required to develop immunoassay monitoring systems for pesticide handlers. However, the research data to date indicate that an immunoassay-based personal monitoring exposure system probably could be developed. Immunoassay devices use antibodies as receptors to sample the environment of the exposed persons. Specific antibodies to many pesticides of concern already have been developed and evaluated, but specific antibodies for other priority compounds need to be identified. Ideally, a sampling system would be developed to incorporate all of the compounds of concern. The Agency strongly encourages the rapid development of practical and reliable techniques of this kind and welcomes further information on ongoing research and the opportunity to cooperate with developers on the necessary research. To support the goal of improving exposure monitoring technology, the Agency also intends to consider requiring the development of such detection methods for the registration or continued registration of selected pesticides.

In conclusion, although a blood-level cholinesterase monitoring program may be prudent for some handlers, EPA has determined that imposing a nationwide requirement for such monitoring is not justified at this time. The Agency is not convinced that such a program would provide benefits commensurate with the costs entailed. The Agency intends to pursue the development of more effective exposure monitoring systems, such as the immunoassay-based system discussed above.

EPA intends to reconsider the need for and the appropriate form of exposure monitoring for pesticide handlers after this final Worker Protection Standard has been implemented. This will give the Agency the opportunity to evaluate more thoroughly the ongoing research in this area and the results of new or existing exposure monitoring programs. The Agency expects to issue a proposed rule in this area in about 3 years.

2. *Relationship between OSHA's Hazard Communication Standard and EPA's Worker Protection Standard.* The proposed revisions to the Worker Protection Standard (WPS) were published July 8, 1988; the following month, August 8, 1988, the Occupational

Safety and Health Administration (OSHA) published a notice of proposed rulemaking which would modify its Hazard Communication Standard (HCS). In the preamble to these proposed modifications, OSHA states that the HCS would apply to workers who are exposed to pesticide residues after application.

EPA received numerous comments that pointed to the potential overlap of some requirements of the WPS with those of the HCS. Those who wrote were concerned that the requirements of the two standards might duplicate each other or might be conflicting. A few were concerned about possible conflicts with similar State laws. All want to see EPA and OSHA resolve any potential conflict before their respective regulations are made final.

Some respondents felt that OSHA should have responsibility for defining hazard communication in agriculture; more felt that EPA should have the responsibility where pesticides are used. Some asked that the access-to-labeling provisions of the WPS be deleted because of the OSHA regulation calling for access to MSDSs.

Some growers claimed they should be exempt from the WPS because they are covered by OSHA. Worker representatives want EPA to require training for all workers, as the HCS does.

EPA has made a commitment to work with OSHA within the constraints of each Agency's statutes to minimize confusion and to avoid duplication between the requirements of each Agency. Section 4(b)(1) of the Occupational Safety and Health Act precludes OSHA from regulating working conditions or hazards with respect to which other Federal agencies exercise statutory authority to prescribe or to enforce standards or regulations affecting occupational safety or health (29 U.S.C. 653(4)(b)(1)). In part 170, however, EPA has exercised statutory authority only with regard to agricultural working conditions or hazards that are related to pesticides. The Occupational Safety and Health Act and its regulations may apply to other agricultural working conditions or hazards and to nonagricultural working conditions (e.g., office work) that may take place on agricultural establishments. Among the regulations that may be applicable to nonpesticide working conditions in agriculture are the Hazard Communication Standard (29 CFR 1928.21) and the Field Sanitation Standard (29 CFR 1928.110). Since the OSHA Field Sanitation Standard addresses general sanitary hazards, rather than pesticide hazards, EPA believes its applicability is not affected by part 170.

IV. Labeling Statements

A. Background of Proposal

The Agency noted in the NPRM that for part 170 to be enforceable under the misuse provision of FIFRA section 12(a)(2)(G), its requirements must be incorporated onto pesticide labels or labeling. Rather than require that the regulations be printed in their entirety on each product, EPA proposed that part 170 be incorporated by means of a reference statement. In addition to the reference statement, those requirements of part 170 that were product specific, such as personal protective equipment and restricted-entry intervals, and product-specific information necessary for compliance with part 170, such as whether the product is a fumigant, would appear as statements on labeling. Requirements applicable to all products, such as providing decontamination water, would not appear as statements on labeling.

The NPRM proposed that the required worker protection labeling statements be consolidated for the convenience of registrants in a new subpart K of part 156, "Labeling Requirements for Pesticides and Devices." The Agency proposed specific regulatory text and labeling statements for part 156, and solicited comment on the labeling aspects of the Worker Protection Standard. The Agency also discussed how it would implement these labeling changes as part of its pesticide registration program.

B. Reference Statement

The comments were divided evenly in opposing or supporting the proposal to reference part 170 on the label rather than including the full text of all requirements in labeling. Comments that opposed the proposal to reference part 170 gave reasons such as: (1) The problem of availability of the specific requirements of the regulation should it not be incorporated in pesticide labeling in its entirety, (2) the need for information at the use site, and (3) the undermining of the "read the label" and the "label is the law" message that users have been trained to follow. They suggested that noncompliance is more likely for requirements that are not on the label. Several comments stressed the need for wide dissemination of the requisite information. Two comments suggested that users should not be referred to part 170 but to Agency-generated guides, instructional materials, or popularized versions of the regulations.

The Agency acknowledges the need for pesticide users to have access to full information about the legal requirements for use of a pesticide. It also notes that in many cases the quantity of information on pesticide labeling is considerable. Confusion in understanding labeling statements may result in noncompliance as surely as difficulty in obtaining the information may result in noncompliance. The Agency intends to develop and to make available, through its outreach activities and with the assistance of the Cooperative Extension Service, State pesticide-regulating agencies, and the traditional networks of communication with the agricultural community such as commodity organizations and industry associations, information to assist users in understanding and complying with part 170. EPA believes that such information will minimize the need for users to seek out the Code of Federal Regulations (CFR) to understand their duties. The Agency intends to complete the development of basic training materials prior to implementing part 170. The Agency considered requiring registrants to distribute a copy of part 170 with each sale of agricultural pesticides, but concluded that such requirement would result in waste through duplication. However, the Agency encourages any efforts registrants choose to make to communicate part 170 requirements to users. The Agency has retained its approach in the final rule of referencing part 170 on the label, but has changed the language in the reference statement for the purposes of brevity and clarity.

C. Other Statements

Other changes have been made to part 156 in response to comments. The proposed wording of the labeling statements for restricted-entry intervals, notification, and personal protective equipment have been shortened.

One comment suggested that the signal word be required to appear in Spanish for products in toxicity categories III and IV as well as on products in toxicity categories I and II.

The Agency believes that for the most toxic products, where there is a significant risk of serious injury by accidental exposure, it is reasonable to require translation of a limited amount of critical information, such as the signal word, into Spanish because it is the primary language for many agricultural workers in the United States. Extending this translation requirement to additional products, information, or languages would add verbiage to already crowded product labels without

increasing the likelihood of avoiding additional pesticide poisonings. EPA permits a product to bear labeling in languages other than English, but it will not require translation as part of the final rule.

A number of changes to worker protection statements have been made in the final rule in response to comments. These changes have focused on risk mitigation measures such as the entry restrictions, notification about treated areas, and use of personal protective equipment by handlers and other workers entering treated areas prior to the expiration of a restricted-entry interval. The restricted-entry statements are to be placed in the "Directions For Use" section of the pesticide labeling under the subheading of "Agricultural Use Requirements" to consolidate most worker protection statements in one place.

No comments were received in reference to the proposed notification statements. Several changes to the notification section have been made in the final rule. The wording of the statement was changed to "notify workers of the application by warning them orally and posting warning signs at entrances to treated areas" rather than merely "subject to posting" to distinguish the statement from other general requirements of part 170 which involve the display of written materials. The subsection related to location of the statement on the labeling has been modified to require that the notification requirement be in the Agricultural Use Requirements section of the labeling with the other required worker protection statements.

No comments were received on the proposed personal protective equipment statements. In the final rule the Agency has made a number of administrative and technical changes to these sections. These are reflected in changes in the terminology used in the table for the protective equipment requirements for handling activities in 40 CFR 156.212(e). For example, the term "coveralls" has been used instead of "protective suit" and "protective eyewear" has been used instead of "goggles or face shield."

Two differences between the proposed and the final rule relate to PPE labeling statements. Wherever possible throughout the PPE section, the Agency has taken the approach of specifying the exact wording of PPE labeling statements and specifying which products are subject to the statement. The goals of this approach are to reduce the burden on registrants in interpreting part 156 in the process of revising product labeling and to reduce the need for registrants to consult with EPA about PPE labeling language.

Another difference between the proposed and the final rule is the way in which information about acceptable types of PPE is conveyed to users. Specific types of glove materials will be recommended on the labeling, and specific types of respirators will be required on the pesticide labeling. Where protection of a certain body area is called for, e.g., eye protection, the labeling will not list all acceptable kinds of protective eyewear. Instead, the labeling statement will list "protective eyewear," and users will refer to the standardized definition of acceptable kinds of PPE for eye protection in 40 CFR 170.240 (the section of the pesticide-handling subpart which covers PPE), in the EPA-prepared guidance brochure on protective eyewear, or in other new EPA training materials dealing with PPE. Through these definitions and through handler training programs, users should become accustomed to the criteria for acceptable types of PPE, and EPA believes this will reduce labeling verbiage related to PPE.

EPA has made every effort to minimize the additional labeling language necessitated by the revisions to part 170 and to eliminate excess verbiage. At the same time, EPA recognizes that use restrictions can ordinarily be enforced only through labeling statements. EPA's approach, therefore, has been to put users on notice, via the labeling, of the regulations with which they must comply.

One comment suggested requiring the identification of the toxicity category on product labels. Signal words are intended to convey the relative acute toxicity of products in a manner users can understand easily. Since users may not be aware of the criteria on which toxicity categories are based, the Agency believes that the toxicity category would not be useful on labeling and that the signal word is sufficient.

In the final rule, EPA has specified the location, or alternative locations, for all required statements. The final rule allows that statements be consolidated, to the extent possible, for the convenience of the reader and that statements be at the beginning of the directions for use to emphasize their importance.

V. Statutory Review

A. U.S. Department of Agriculture

As required by FIFRA section 25(a), a copy of this final rule was provided to the Secretary of Agriculture on June 7, 1991. On March 27, 1992, the Secretary provided written comments on this final rule. The Secretary offered many comments that led EPA to revise the final rule, its cost estimates, and its approach to implementation of the final rule. Following is a summary of the principal comments by the Secretary, together with the Agency's responses. The full texts of the Secretary's comments and EPA's responses are contained in the docket for this rule.

Comment #1: USDA expressed concern about the impact of restricted-entry intervals (REIs) that exceed 72 hours.

Response: USDA's concern is due to two aspects of the draft final rule: (a) A requirement that registrants must retain existing REIs that are longer than those that would be established through the Worker Protection Standard, and (b) a redefinition of "restricted-entry interval" — instead of allowing early entry if minimal protective clothing is worn, the rule now prohibits all early entry to perform hand labor tasks, except for a few narrow exceptions. Therefore, this rule might subject users to considerable costs that were not contemplated when these longer REIs were set. EPA believes that USDA has a valid concern regarding longer REIs established before the promulgation of this rule.

EPA has ascertained that REIs exceed 72 hours for only a few currently registered active ingredients—usually for only a few uses of each. EPA is reviewing such uses for each of the few active ingredients in light of current information. The review is based on the availability of reentry data, poisoning incidents, or other evidence that could help determine: (a) Whether routine early entry to perform hand labor tasks must be prohibited for the entire REI to mitigate risk to hand laborers, or (b) whether early entry for hand laborers with personal protective equipment (PPE) and other protections could be permitted on pesticide labeling as an appropriate temporary mechanism to respond to USDA's concerns about disruptions and costs to growers who are using pesticides with REIs longer than 72 hours, or (c) whether another product-specific strategy should be adopted.

EPA will notify registrants of this review process and will request that registrants notify EPA of longer REIs that may have been overlooked in the Agency's search. With cooperation from affected registrants, EPA expects to complete the review process in time for those registrants to alter their labeling within the time allotted in this rule.

Comment #2: Activities that entail only slight contact with treated surfaces should be subject to a reduced standard, and provision should be made to permit necessary agricultural worker activities with the use of PPE, particularly when REIs exceed 72 hours.

Response: The final rule contains an exception that allows early entry for activities that involve no contact with anything that has been treated with the pesticide to which the REI applies, including, but not limited to, soil, water, air, or surfaces of plants in the treated area. However, when contact with treated surfaces will occur, EPA is unable to predict on a generic basis which activities, crops, and situations will involve only "slight" contact. This can be determined only through data review, usually as part of the registration or reregistration process. See preamble discussion in Unit III—establishing entry restrictions in the future.

During the formal comment period for this rulemaking, EPA received many comments from the cut flower and cut fern industry about the economic hardship that prohibiting routine hand labor during REIs would cause their industry. The Agency did not receive comments from other industries or commodity organizations that indicated that they would sustain such a hardship and the Agency has no information indicating that any crops or industries other than the cut flower and cut fern industry would be significantly affected by the entry restrictions imposed by this final rule. However, there may be other industries, crops, or crop practices that would bear an unreasonable economic burden under such restrictions. Therefore, the final rule allows the Agency to grant exceptions to the entry restrictions on a case-by-case basis.

Comment #3: USDA believes it is imperative that EPA clarify whether the prohibition on early entry to perform hand labor tasks applies to State-established REIs.

Response: States determine the restrictions that apply to State-established REIs. The final rule's restrictions on entry apply solely to REIs that appear on federally approved pesticide product labeling. On some occasions, registrants request the addition of a State-established REI to their federally approved product labeling. If EPA approves such an addition, a decision will be made on a case-by-case basis as to whether to prohibit routine early entry to perform hand labor tasks during the entire State-established REI. EPA may chose to create an exception on individual product labeling to allow, after the expiration of the EPA-mandated REI, early entry to perform routine hand labor tasks with certain limited PPE and work clothing.

Comment #4: USDA supports the concept of providing training to workers who may be exposed to potentially dangerous pesticides.

Response: None required.

Comment #5: USDA expressed concern that the manner in which training is required is unreasonably burdensome.

Response: USDA's concern is that if EPA requires training before each worker is potentially exposed, then training one or more times daily could be required of employers with frequent employee turnover, as is common in some hand labor crews. Such training might have to be conducted on the spot, such as at the side of the field, and would likely be less beneficial to the worker and onerous to the employer.

EPA will continue to require that early entry workers must be trained before entering areas and contacting treated surfaces while an REI is in effect, because their risks are expected to be higher. EPA has made a change, however, in the training requirement for non-early-entry workers. The modified rule continues to require training for all agricultural workers. However, in general, the modified rule requires agricultural employers to assure that when any worker enters any areas on the agricultural establishment where, within the last 30 days, a pesticide has been applied or an REI has been in effect, the worker receives pesticide safety training before their 6th day of entry into such treated areas on any particular agricultural establishment. However, for the first 5 years after the effective date of the rule, workers must be trained before their 16th day of entry into such treated areas on any particular agricultural establishment.

Finally, it should be noted that EPA deliberately established a relatively lengthy (about 20 months) lead time before the training provisions of the final rule would be enforceable. This lead time was established, in part, so that a substantial number of workers could be trained in the interim. Once a large percentage of workers have been trained, the concern about repetitive training diminishes, because many new hires already will have received training.

This issue does not pertain to handlers' for whom risks are expected to be higher—the rule requires that handlers receive training before they handle pesticides.

Comment #6: USDA expressed concern about the absence of a formal mechanism to avoid repetitive training of each new hire on each agricultural establishment. USDA welcomes the opportunity to work with EPA to develop such a verification program.

Response: Two changes to the final rule were made. The rule now requires training for workers or handlers to be renewed at least once every 5 years. In addition, the rule now states that if the agricultural employer determines that a worker possesses an EPA-approved Worker Protection Standard training certificate that the employer has no reason to believe is invalid, that determination shall meet the requirements of assuring that the worker has been trained. The revised final rule requires trainers to assure that appropriate Worker Protection Standard training has been given to a worker before the training certificate is issued.

Comment #7: Additional funding will be required if EPA anticipates that USDA will meet some of the training requirements of this rule.

Response: EPA has not assumed that USDA will be the vehicle to meet the training requirements. The Agency believes that employers will train most workers and handlers. In addition, EPA will promote training by other interested persons and organizations by conducting train-the-trainer courses and by developing suitable training materials and making them available for trainers' use. However, EPA seeks to work closely with USDA in the development of Worker Protection Standard training materials, including materials designed to train workers and pesticide handlers and materials targeted at aiding growers in learning how to comply with the revised rule. EPA also seeks to cooperate with USDA in the development and implementation of the training verification system and other projects designed to inform the regulated audience about the revised rule and how to comply with it.

Comment #8: Making agricultural producers responsible for employees' own safety actions is unrealistic.

Response: While compliance is primarily a duty of employers under the final rule, enforcement officials have authority to consider the facts of the case before making a determination of whether a violation has occurred. The Agency agrees, for example, that it would be unfair for employers who expend considerable efforts to assure compliance to be treated in the same manner as less conscientious employers who tolerate or encourage noncompliance. However, the Agency believes that it is more appropriate not to intrude by regulation into this area.

Enforcement officials have traditionally based their compliance decisions on the facts of an individual case.

Comment #9: USDA questions the requirement that a listing of all pesticides applied must be displayed in a central location until 30 days after the REI has expired.

Response: The NPRM, which proposed that the information be provided to workers upon request, generated many comments. The majority of the commenters, including worker organizations, State agencies, and a land-grant university, recommended that the information be provided to workers through posting. The National Agricultural Chemicals Association recommended a requirement that the information be provided with each oral warning. Some commenters cited worker intimidation as the reason for opposing the proposal that information be supplied upon request. Others cited the potential difficulties that employers would have in complying with individual oral requests for such information. EPA was persuaded by the comments to require the posting of this information at a central place. On that basis, in turn, EPA was persuaded to drop the proposed daily oral warnings and require one-time oral warnings instead. EPA believes that most employers would find daily oral warnings more onerous than a one-time posting in a central location.

Comment #10: The rule needs to clarify when the employer is responsible for making available to the worker prompt transportation to an appropriate emergency facility. USDA interprets this to be applicable only while the employee is on the employer's property.

Response: EPA has clarified in the final rule that the agricultural employer must provide such transportation when a worker is on the employer's property, including in any labor camp located on the property. The Agency has similarly clarified in the final rule that the handler employer must provide emergency transportation when a handler is at the place of employment or at the handling site.

Comment #11: The decontamination provisions are unreasonably burdensome to employers because of the requirement for potable water for handwashing purposes.

Response: A change to the final rule was made. EPA replaced the requirement for potable water with a requirement for water that is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed.

Evidence indicates that the drinking water on many agricultural establishments has not been test for potability. EPA continues to require water of such quality that, if accidently swallowed, would not cause illness or injury, because it is concerned that workers will accidently use decontamination water for drinking purposes. In addition, the Agency recognizes that water used to wash the face may accidently enter the mouth. EPA believes that this is a simple standard that will be easy for employers to understand and comply with.

Comment #12: The cost for eyeflush dispensers should be accounted for.

Response: USDA's comments on the cost analysis of eyeflush dispensers led, in part, to EPA's reexamination of the requirement. The language of the rule has been altered to change the requirement from "eyeflush dispenser" to "eyeflush water," and the requirements for decontamination water and eyeflush water have been combined in the rule to avoid confusion. In addition, the requirement for weekly replacement of nonsterile eyeflush water has been deleted and a performance standard has been added that requires employers to ensure that the decontamination and eyeflush water remains "of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed."

Eyeflush dispensers are no longer specifically required at decontamination sites; instead, eyeflush water is required. For example, eyeflush water may be the water in a carboy containing the decontamination water or may be running water from a tap. While special eyeflush dispensers may be used, any source of water that meets the standards for decontamination in the final rulemaking is acceptable for flushing the eyes. Eyeflush dispensers would be required only when handlers or early-entry workers must carry eyeflush water. This would occur only when handlers or early-entry workers are required by the pesticide labeling to wear protective eyewear and when they do not have decontamination water otherwise immediately accessible to them, such as running water nearby or a carboy on a vehicle they are using.

Comment #13: USDA questions whether it is reasonable to require decontamination facilities and training for a period of 30 days after the expiration of the REI.

Response: EPA reconsidered the 30-day time period due to comments from both USDA and Congress, and remains convinced that pesticide safety training and access to decontamination water are necessary for a considerable time after the REI expires. (Congress requested a time period longer than 30 days.) The final rule continues to require that worker training and decontamination water be provided for 30 days after the expiration of the REI.

The 30-day period was an attempt to limit and better define the sometimes open-ended time period in the NPRM that was "any surface that has been treated with a pesticide during the agricultural crop production cycle in which the task occurs." (NPRM § 170.38(a)) In addition, it is important to note that this final rule is establishing minimum REIs. These REIs are intended as temporary safeguards until product-specific reviews are conducted. At that time, the Agency anticipates that longer REIs will be established on some of the products, based on restricted-entry-related incidents or on entry data.

On the other hand, even permanent product-specific REIs are based on "average" conditions. They do not and cannot take into account differences due to temperature and humidity; rainfall, dew, and irrigation practices; degree of sunlight; crop type, height, and density; region-specific production practices; or worker activity and length of exposure.

Evidence indicates the importance of washing pesticides off as soon as possible after an exposure to mitigate adverse effects. Retaining decontamination requirements for a period of 30 days after the expiration of an REI minimizes the chances that workers will be harmed by residues, decreases their chronic exposures to pesticides, and lessens the risk of delayed effects that may be unrecognized at present. Studies also indicate the value of training in any program to reduce risk and increase safety.

EPA has concluded that providing workers with pesticide safety training and supplying them with water, soap, and towels for routine washing for a period of 30 days after the expiration of an REI is a prudent and inexpensive measure to protect them from a variety of opportunities for exposure to pesticides.

Comment #14: EPA should establish regional climate-based restricted-entry intervals, and the need for decontamination provisions and safety training should be based on the pesticide persistence expected in a particular region.

Response: When EPA establishes product-specific REIs all available data for the product are considered. All such REIs must be set on a case-by-case basis, after detailed review of the properties and uses of the pesticide. Such a detailed review is not possible in

a regulation of the scope of the Worker Protection Standard. Part 170 establishes only "interim" REIs to strengthen deficient existing protections until a more thorough review can be performed.

As discussed in response to Comment #13, restricted-entry intervals will, for the most part, be based on "average" conditions. Even in the ideal situation, where entry is based on on-site field tests, situations will arise where workers will be exposed to unacceptable levels of residues. These situations include being contacted by drift from nearby applications, mistakes in warnings about areas not yet safe to enter, "hot spots" within treated areas from spills, or application mistakes, etc. In addition, the establishment of a residue level that is "safe" for entry involves, at this time, only an analysis of exposure to a specific product on a specific occasion, and is often based only upon acute toxicity data. The Agency is also concerned about acute and delayed health effect risks from the cumulative effect of multiple exposures to a single product and multiple exposures to multiple products. Since the opportunities for exposure are so variable, training employees once every 5 years and providing decontamination facilities for a period of 30 days after the restricted-entry interval seem to be prudent, low-cost measures that can reduce the pesticide-related illnesses and injuries that may stem from such exposures.

Comment #15: USDA takes exception to the term "decontamination facilities" after the expiration of the REI when the risk of pesticide exposure is negligible and suggests "personal hygiene facilities" or simply "handwashing facilities."

Response: EPA will continue to call the provision "decontamination facilities," because the term best describes the purpose of providing soap, towels, and water to pesticide handlers, early-entry workers, and agricultural workers working in areas that have recently been treated with pesticides. The Agency does not consider the risk of pesticide exposure to be negligible for these employees.

Comment #16: USDA is concerned that regulation beyond the harvest interval could be misinterpreted in a manner that would generate unwarranted food safety concerns.

Response: Preharvest intervals and entry restrictions are based on different criteria. Entry restrictions are based on the expected skin or eye exposure that workers might receive during an entire workday from exposure to residues on foliage, fruit, other plant parts, and in or on the soil, water, or air. Preharvest intervals are based on the expected dietary intake of the edible portion of the crop based on amounts consumed. The Agency has concluded that field workers often will have a far greater opportunity for exposure than the consumers of the crop they pick. Finally, the uncertainties associated with any REI have already been discussed. This uncertainty has led EPA to require prudent, but economical, worker protections after the REI has expired.

Comment #17: In informal discussions between EPA and USDA about this final rule, USDA expressed concern about limiting the access of crop consultants and IPM scouts to treated areas immediately following pesticide applications and during REIs.

Response: EPA has changed the final rule to allow persons who are performing duties as crop advisors to have access to treated areas without a time limitation. A crop advisor is defined as any person who is assessing pest numbers or damage, pesticide distribution, or the status or requirements of agricultural plants. The term does not include any person who is performing hand labor tasks. EPA was unwilling to exempt crop advisors from all of the protections provided by this rule, but has defined them as pesticide handlers if they enter an area during a pesticide application or REI. As pesticide handlers, they must receive such protections as handler training (unless already certified applicators), PPE and the availability of decontamination facilities. However, since crop advisors who are employed by commercial establishments (rather than directly for the agricultural establishment) are not workers covered by part 170 protections, their presence in a treated area after the expiration of the REI will not trigger notification requirements, such as oral warnings, treated area posting, or posting of application-specific information, and the operator of the establishment need not supply them with decontamination sites. The Agency bases this change on its conclusion that crop advisors are likely to be particularly well-informed about pesticide risks and how to protect themselves.

Comment #18: USDA raised concerns about the Regulatory Impact Analysis.

Response: In light of USDA's concerns, EPA reexamined the Regulatory Impact Analysis for this final rule. The Agency used USDA-provided data and data from other sources to update and refine the analyses for the various requirements of the rule. The full text of EPA's responses to USDA's concerns is contained in the docket and in EPA's revised Regulatory Impact Analysis for this rule.

B. Congressional Committees

As required by FIFRA section 25(a), a copy of this final rule was provided to the Committee on Agriculture, Nutrition, and Forestry of the U.S. Senate and the Committee on Agriculture of the U.S. House of Representatives. Comments were provided by Senator Patrick Leahy and Representative Charlie Rose. Following is a summary of each comment by Senator Leahy and Representative Rose, together with the Agency's response.

Comment #1: Supports covering greenhouse, nursery, and forestry workers.

Response: None required.

Comment #2: Supports prohibiting routine hand labor activities prior to the expiration of the applicable restricted-entry interval.

Response: None required.

Comment #3: Supports covering all farms regardless of size.

Response: None required.

Comment #4: Supports training for workers as well as handlers.

Response: None required.

Comment #5: All field workers should be given crop sheets.

Response: The Agency agrees that workers should have access to information about the hazards of the specific pesticides to which they may be exposed during their work activities. Crop sheets provide workers with hazard information for all the pesticides that may be applied to the crops they are working with. The Agency is establishing a system whereby information on the specific pesticide(s) actually used on a crop will be posted at a central location to which workers will have access. The Agency is also proposing to make MSDSs or comparable pesticide-specific fact sheets available to workers. The information posted at the central location, coupled with MSDS-type information, will allow workers to determine the hazards of the specific pesticides they may be exposed to during their work activities.

Comment #6: The training for workers and handlers should include information on the workers' rights and the growers' responsibilities.

Response: The Agency agrees that workers and handlers should be aware of the protections they are entitled to under the Worker Protection Standard. The Agency has incorporated such a provision into the training requirements for workers and handlers.

Comment #7: All worker and handler training should be ongoing and updated as needed.

Response: The Agency supports the concept of ongoing training and the updating of information as needed. A change to the final rule was made. The final rule now requires training for workers or handlers to be renewed at least once every 5 years, measured from the end of the month in which the training is completed. The Agency believes that such renewal of WPS training will be adequate to convey the basic pesticide safety precepts to handlers and to provide timely updates and reinforcement, without undue burden.

This final rule requires the continual presence of a pesticide safety poster to serve as ongoing reinforcement of training for workers and handlers on agricultural establishments. The final rule also requires employers to update as necessary the information about the location of the nearest emergency medical facility. In addition, updated information about specific pesticides to which the workers may be exposed will be provided to workers as specified under the notification provisions.

Comment #8: Supports establishing a minimum restricted-entry interval (REI) for all pesticides and setting REIs for toxicity category I and II pesticides without distinguishing those of a specific chemical class.

Response: None required.

Comment #9: In all dry areas, all toxicity category I pesticides should have a 72–hour restricted-entry interval.

Response: During the ongoing reregistration of pesticides, the Agency is requiring registrants to supply data about foliar and soil dissipation rates on products for which this information is relevant. When the Agency has the necessary data, it will establish product-specific REIs based on the product, and, as applicable, on the crops or sites where it is used, cultural practices, varying climatic conditions, and application techniques. At present, the Agency has data to indicate that some organophosphates transform into more toxic products in arid conditions. There are no data to indicate that other chemical classes of pesticides undergo similar transformations. Without data to support a longer REI for chemical families other than organophosphates, the Agency has extended the REI to 72 hours for organophosphate pesticides only. The transformation of organophosphates into more toxic products is related to the lack of moisture in the soil and conditions of very low humidity. These conditions are generally found only in areas where rainfall is consistently below 25 inches a year. The Agency believes that defining arid-like conditions, such as a combination of percent humidity, days without measurable dew or rainfall, and percent soil moisture, is unsuitable for establishing these "interim" REIs.

Comment #10: Generic REIs should be established on the basis of the highest acute toxicity rating, whether dermal or oral. (Methomyl poisoning incidents in California cited as basis.)

Response: Studies of fieldworker exposures indicate that the predominant exposures in outdoor situations are to the skin and eyes. Except in those few situations where fieldworkers have eaten fruits or vegetables before the preharvest interval has expired, the Agency is unaware of validated fieldworker poisoning incidents where the primary route of exposure was oral. The worker training materials being developed by the Agency include specific warnings not to eat fruits and vegetables unless a supervisor indicates that it is safe to do so. In this final rule, the Agency intends to establish REIs based on three parameters: dermal toxicity, skin irritation potential, and eye irritation potential. If dermal toxicity data are unavailable, the oral toxicity data will be used. For example, under this strategy, methomyl would be assigned a 48–hour REI because it is a toxicity category I eye irritant.

With respect to the methomyl incidents cited by Congress, preliminary reports indicate that, under special environmental conditions, methomyl dissipation is not following the predicted pattern and rate. EPA will adjust REIs for methomyl to reflect these special environmental conditions, if there are indications that the incidents were not unique. The Agency is unaware of data or conclusions by experts that the oral LD_{50} is a more accurate assessment of the actual hazard to workers than dermal LD_{50}, either in these methomyl incidents or in other fieldworker poisoning incidents.

Comment #11: Continue protections for workers for a minimum of 60 days after the expiration of the restricted-entry interval.

Response: EPA reconsidered the 30–day time period due to comments from both USDA and Congress. The Agency has studied more recent data regarding the incidence of multiple-case systemic illnesses of agricultural field workers from exposure to residues of organophosphates in California. Among the 44 incidents for which data were provided, the mean length of time from application to poisoning was 20 days, with a median of 16 days. The range was from less than 1 day to 66 days, although this latter figure was an outlier and did not appear to be well substantiated. Excluding parathion (no longer registered for most crops) and this outlier, the longest period between application and reentry poisoning was 39 days. The Agency believes that poisoning incidents that occur more than 30 days beyond the REI probably stem from a miscalculation in establishing the REI that is listed on the labeling. Therefore, EPA decided to continue to require that decontamination water be provided for 30 days after the expiration of the REI. See EPA's response to USDA's Comment #13 for a more complete discussion.

Comment #12: Moving or repair of irrigation equipment should be designated as a hand labor task, since workers performing such tasks are likely to come in contact with treated surfaces.

Response: EPA concurs that moving and repairing irrigation equipment may cause workers to contact treated surfaces. However, the Agency believes that this contact will be short-term and mostly nonsubstantial. The Agency realizes that moving, adjusting, or repairing irrigation equipment may be necessary while an area remains under a REI. The Agency has, however, placed strict limitations on early entry to perform such tasks. These include: (1) No entry for the first 4 hours after an application, (2) a limit of 1 hour per worker per day for performing such early entry tasks, (3) PPE provided, cleaned, and maintained for the workers, (4) special instructions provided, including information about the hazards of the pesticide(s) to which the workers will be exposed, and (5) special decontamination and change area provisions.

Comment #13: A responsible agency should determine whether or not an emergency actually exists before early entry due to an agricultural emergency is permitted.

Response: The Agency intends that early entry due to an agricultural emergency be an extremely rare circumstance. Therefore, this final rule requires two separate determinations that an emergency exists: (1) A responsible agency must declare that circumstances exist that might cause an agricultural emergency on an establishment. For example, a State, Tribal, or Federal agency having jurisdiction over the establishment would have to declare that a potentially crop-damaging drought, hail storm, high winds, hurricane, tornado, freeze, or frost has occurred (or is predicted to occur) in the area where the agricultural establishment is located. (2) In addition,

the agricultural employers must declare: (a) That they could not have anticipated the circumstances that led to the emergency when they applied the pesticide, (b) that they had no control over the circumstances that led to the emergency, (c) that no practices other than early entry will prevent or mitigate a substantial economic loss involving the crop in that treated area, and (d) that the loss of profit without early entry will be greater than that which would be expected on the basis of experience and the fluctuations of crop yields in previous years. EPA believes that these rigorous determinations will preclude widespread or improper use of the emergency provisions.

Comment #14: Strongly object to the exemption for cut flower and cut fern workers for early entry. Congress notes that California prohibits early entry for hand labor without apparent deleterious effect on the cut flower industry.

Response: A change to the final rule has been made. The Agency has adopted an exception process that would allow interested persons to demonstrate to the Agency that, in a particular industry, an exception should be granted to the general prohibition on routine early entry. Persons wishing to obtain an exception to the early-entry restrictions would submit a request for such an exception to the Agency. Comments that EPA has already received from the cut flower and cut fern industry have convinced EPA that this industry, at least, probably warrants such an exception. The decision that such an exception is probably warranted is based on a balancing of the risks and benefits that would result from such an exception (see proposed exception to rule published elsewhere in this issue of the **Federal Register**). However, the Agency is interested in a full range of comments and information on this proposed exception and has provided 30 days for interested parties to comment. The Agency particularly welcomes comments supported by information, such as evidence demonstrating whether the risks to workers would be acceptable, whether the use of personal protective equipment in these circumstances would be feasible, and whether there are feasible alternative practices that would make routine early entry unnecessary. The Agency also would welcome any additional information concerning the likely economic impact on this industry of a prohibition of routine hand labor tasks during the restricted-entry intervals.

While EPA has concluded that it would be difficult to ensure worker safety during widespread and routine early entry, narrow exceptions, such as this one, can receive adequate management attention to help ensure compliance when such early entry is critical to a crop.

The Agency notes that although California law prohibits all early entry work involving hand labor, California does not currently impose REIs beyond "sprays have dried/dusts have settled" for many of the pesticides used by the cut flower and cut fern industry. In addition, California has established only a 24–hour REI for toxicity category I pesticides, with longer REIs for specific organophosphate and *N*-methyl carbamate pesticides. This final rule is establishing a minimum 12–hour REI for all pesticides plus a 24–hour REI for all toxicity category II (dermal and ocular routes) pesticides and a 48–hour REI for all toxicity category I (dermal and ocular routes) pesticides. Thus, while California prohibits early entry, its entry standards for this industry are generally less stringent than those of EPA's final rule. The economic impact of complying with EPA's REIs is likely to be higher than compliance with California's entry limitations, unless an exception is provided.

Comment #15: Urge a requirement for cholinesterase monitoring of all commercial and private pesticide handlers who may handle organophosphate or *N*-methyl carbamate pesticides.

Response: The Agency believes that monitoring of employee exposure is a prudent occupational health practice. However, as explained in the preamble (Unit III.I), EPA is concerned about many of the problems of cholinesterase monitoring.

EPA intends to reconsider the need for and the appropriate form of exposure monitoring for pesticide handlers after this final rule is implemented. This will give the Agency the opportunity to evaluate more thoroughly the ongoing research in this area and the results of new or existing exposure monitoring programs. The Agency expects to issue a proposed rule in this area in about 3 years.

Comment #16: Cholinesterase testing of field workers should be required in poisoning incidents involving organophosphate or *N*-methyl carbamate pesticides.

Response: EPA presumes that treating medical personnel would prescribe such testing when appropriate and that prudent employers would encourage such diagnostic tests. However, the focus of this rule is prevention of poisoning incidents for persons occupationally exposed to agricultural pesticides. It does not address diagnosis or treatment of pesticide illnesses or injuries. Diagnostic testing was not proposed in the NPRM and the Agency deems such a requirement beyond the scope of this rule.

Comment #17: Supports evacuation of greenhouse workers during fumigation application and restricted-entry periods.

Response: None required.

Comment #18: Supports mandatory posting of treated areas in greenhouses.

Response: None required.

Comment #19: Unrealistic to expect that unprotected workers could reenter treated areas in greenhouses and nurseries without exposure to pesticide-treated surfaces.

Response: The Agency is convinced that there are situations in which workers may reenter many areas in nurseries and greenhouses without contacting treated surfaces, and has chosen to permit such entry. An example of such entry is when workers are wearing footwear and are walking through the aisles of treated areas where the plants or other treated surfaces cannot brush against the worker and cannot drop or drip pesticides onto the worker. Under the final rule, worker entry into treated areas is prohibited when contact would take place.

Comment #20: Concerned about the adequacy of the ventilation and buffer zone criteria established for greenhouses and nurseries and urge further study of the effectiveness of the standards in practice.

Response: The Agency is interested in cooperating in research or evaluations that might be done on this aspect of the regulation and has held some preliminary discussions as to the best design of such a research project.

Comment #21: Not requiring notification for workers who are not expected to come within 1/4 mile of a treated area is inappropriate.

Response: EPA acknowledges that workers frequently are required to move throughout the field or nursery to accomplish their assigned tasks. This final rule requires employers to notify workers of any pesticide application on the establishment unless the employer makes sure that the worker will not be in the treated area and will not walk within 1/4 mile of the treated area. As a practical matter, if workers move throughout an establishment, their employer must notify them of all treated areas on the establishment remaining under an REI. The exception to the notification requirement is intended to be in effect only when pesticides are

applied at times when workers are not present on the property or when pesticides are applied to distant areas of the establishment where no work activities are occurring. Some farms, nurseries, and forests are vast or noncontiguous; requiring workers to be notified of areas greatly distant from their place of work would be pointless and counterproductive.

Comment #22: Concern about EPA's rejection of the skull and crossbones symbol for the restricted-entry sign.

Response: The Agency acknowledges that the skull and crossbones is a far more recognized symbol for "highly toxic" or "very poisonous" than any other pictorial representation. For precisely that reason, FIFRA requires the skull and crossbones symbol on the labels of pesticides that are highly toxic orally, dermally, or through inhalation. EPA prohibits the use of the skull and crossbones symbol on any other pesticide label. The Agency has consistently taught pesticide users that the skull and crossbones is the symbol for the most highly toxic pesticides, i.e. those where only a few drops by mouth could be fatal.

For this reason, the Agency is convinced that the skull and crossbones is not appropriate for notifying workers of areas remaining under an REI. While some of these areas may have been treated with highly toxic pesticides, other areas may have been treated with moderately or slightly toxic pesticides. Rather than diluting the impact of the skull and crossbones symbol, EPA has chosen to create a new symbol for restricted entry.

The Agency is taking several steps to assure recognition and acceptance of the new symbol: (1) The symbol is mandatory nationwide. States and industries currently using other signs and symbols must use the EPA-mandated sign. (2) Mandatory worker training programs must explain the symbol to workers. (3) The EPA-mandated pesticide safety poster will serve as a reminder to workers by depicting the restricted-entry sign and its meaning.

Comment #23: The implementation time frames are too long. All regulations should be mandatory within 8 months.

Response: Implementation and enforcement of the revised Rule depends on the misuse provision of FIFRA section 12(a)(2)(G) that states it is unlawful "to use any registered pesticide in a manner inconsistent with its labeling." Thus, the provisions of the Worker Protection Standard must be in the labeling or must be linked to pesticide product labeling as directions for use before they can be implemented or enforced. Although the Agency strongly believes that the protective measures of this final rule should become effective as soon as practicable, it has concluded that a phased and orderly schedule of relabeling, information dissemination and training, and enforcement is needed to facilitate both registrant compliance with the new labeling requirements and user understanding and compliance with the worker protection standard.

Therefore, the Agency will require that no revised labels appear in the marketplace for approximately the first 8 months after promulgation so the Agency will have an opportunity to explain the requirements to users. Thereafter, product-specific requirements will be enforceable when they appear on labeling. Twenty months is the latest time that labeling may be revised by the registrants. EPA expects many labeling revisions will occur earlier than the 20-month deadline.

Comment #24: The regulatory protections ignore chronic health risks.

Response: The Agency is concerned about minimizing both acute and chronic health risks. Several provisions of this final rule are designed, at least in part, to reduce chronic health risks. These include: (1) Incorporating information about chronic risks and how to avoid them into the mandatory worker and handler training programs, (2) providing decontamination sites for 30 days beyond the expiration of the REI, (3) establishing a minimum REI of 12 hours for all pesticides, and (4) establishing for all handlers and early-entry workers minimum PPE and work clothing requirements designed to minimize dermal exposure to all pesticides, regardless of their acute toxicity. EPA believes that these protections against acute risks, if adhered to consistently over time, will protect against chronic risks as well, by reducing exposures that may give rise to chronic effects. On the other hand, the Agency has concluded that more stringent pesticide-specific protections (such as REIs or PPE) based on chronic health risks should more appropriately be set after case-by-case review.

Comment #25: No buffer zones are required to protect workers in the field from drift.

Response: The Agency recognizes that drift from nearby applications is a common cause of exposure for agricultural workers. This final rule specifically requires that both the pesticide handler and the handler's employer must make sure that the pesticide is not applied so as to contact, either directly or through drift, any worker or other person, other than an appropriately trained and equipped handler. EPA considers this protection so crucial that it is the one situation where a generic requirement from the Standard is listed on each pesticide product label.

Comment #26: Toxicological concerns about inert ingredients are ignored.

Response: The Agency is concerned about minimizing risks to workers and handlers of any chemicals of toxicological concern, whether they are active or inert ingredients. In establishing PPE requirements for handlers and early-entry workers in the final rule, the Agency considers the toxicity of the formulated pesticide product. The toxicity of the formulated product encompasses the toxicological characteristics of both the active ingredient(s) and the inert ingredient(s).

In establishing REIs, however, the Agency has determined that the properties of the active ingredient(s) are the main toxicological concern. Many of the inert ingredients that might otherwise pose a toxicological hazard are volatile and will not remain on the treated surface beyond the first few hours. Similarly, EPA has chosen to consider only the toxicity of the active ingredient(s) in establishing REIs and in determining which products must contain a requirement for both oral warnings and treated area posting.

In a process separate from this rule, EPA is evaluating and, where appropriate, reducing the risks posed by inert ingredients. In addition, the Agency will evaluate the risks of all formulations, including their inert ingredients, during its accelerated reregistration program, now underway. The Agency has concluded that further attention to inert ingredients in the final rule is unnecessary.

C. FIFRA Scientific Advisory Panel

Pursuant to FIFRA section 25(d), a copy of this final rule was provided to the FIFRA Scientific Advisory Panel (SAP). The SAP waived review of the final rule.

VI. Implementation

A. Agency Implementation Strategy

1. *Phased implementation.* The Agency is establishing different implementation dates for the requirements in part 170 and the changes required in pesticide labeling found in part 156.

The first amended labeling under part 156 would be available to users no sooner than April 21, 1993. As pesticide products with amended labeling are used, EPA will begin to enforce the

provisions of part 170 that are related to the new specific requirements on pesticide product labeling for restricted-entry intervals, personal protective equipment, and notification about treated areas.

After April 21, 1994, all products covered by this rule must have amended labeling when they are distributed or sold by registrants.

After April 15, 1994, EPA will begin to enforce the remaining provisions of part 170.

Implementation and enforcement of the revised Worker Protection Standard depend upon the misuse provision of FIFRA section 12(a)(2)(G) that states it is unlawful "to use any registered pesticide in a manner inconsistent with its labeling." Thus, the provisions of this revised standard must be in the labeling or must be linked to pesticide product labeling by reference before they can be implemented or enforced.

Currently, changes in directions for use ordinarily are incorporated in their entirety into the labeling of each affected pesticide product. Implementation and enforcement of new directions for use occur when a pesticide product with the changed labeling is used. The Agency has determined that implementation of the Worker Protection Standard through this mechanism would be difficult. Only worker protection requirements that vary from product to product will be placed on the pesticide product labeling as specific directions for use. Part 170 requirements that do not vary among affected products will not be repeated in each product's labeling; the Agency will reference these standards on pesticide product labeling.

Placing requirements related to the directions for use in documents that are referenced on the pesticide product labeling, but which do not accompany the product in commerce, is unusual. Although the Agency believes the protective measures of the revised part 170 should become effective as soon as possible, it has concluded that a phased and orderly schedule of relabeling, information dissemination, and enforcement is needed to facilitate both registrant compliance with the new labeling requirements and user understanding and compliance with the Worker Protection Standard.

The requirements of the revised Worker Protection Standard related to a product's potential hazard to users and other persons will be on the label or in the product labeling. A registrant of an affected pesticide product will be required to specify: (1) A prohibition from applying the pesticide in a manner that contacts anyone except appropriately trained and equipped handlers, (2) PPE for handling and early-entry activities, (3) a restricted-entry interval, and (4) when appropriate, that workers be notified orally and by posting of signs at the treated areas.

Although the concepts of not applying pesticides when workers or other people may be contacted, of using PPE to handle pesticides, of restricting entry to treated areas, and of notification about pesticide-treated areas are familiar to agricultural pesticide users, this rulemaking modifies these requirements in significant ways. Since these product-specific provisions are essential to the safe use of a pesticide, the Agency is unwilling to delay their implementation. Consequently, all product-specific requirements will be effective as soon as they appear on pesticide product labeling. However, the Agency will require that no such labeling changes appear in the marketplace until there has been an opportunity to explain them to users.

Other new requirements apply to all pesticide products used in the production of agricultural plants. These include the requirements for training handlers and agricultural workers, for providing pesticide-specific information to employees, and for providing decontamination water and emergency assistance for handlers and workers. It is not practical to describe these requirements fully in the product labeling. Therefore, it will take time to communicate these requirements to the agricultural community and for that community to implement them. As a result, enforcement of the general requirements will be delayed as described below. (Unit VI.A.2.)

2. *Implementation of part 170.* EPA will implement part 170 in two phases:

a. *Accelerated implementation of provisions supporting product-specific labeling.* Specific requirements related to restricted-entry intervals and notification about treated areas are being added or changed through this revision of part 170.

To implement the requirements that will be found on some product labeling for restricted-entry intervals, and the instructions to both orally warn and post treated areas, sections of part 170 that concern these requirements and the exceptions to these requirements must be implemented quickly to prevent unintended burden on the user during the phase-in period of compliance with this regulation. The sections of part 170 that will have accelerated implementation, i.e. that will be enforced as the associated statements appear in pesticide labeling are:

i. *Sections of part 170 related to entry restriction.* Section 170.112(a)(1) through (a)(4) states the general restrictions on worker entry to treated areas prior to the expiration of an REI. Section 170.112(b) describes an exception to the general restrictions and permits entry if the worker will have no contact with anything that has been treated with the pesticide to which the REI applies. Sections 170.112(c)(1) through (3) describe the exemption for early entry to perform short-term tasks and describe the requirements for that exemption which will be implemented on an accelerated schedule. Sections 170.112(d)(1) through (2)(ii) plus 170.112(c)(3) that is referenced in (d)(2)(iii) describe the exemption for early entry due to an agricultural emergency and describe the requirements for that exemption which will be implemented on an accelerated schedule.

ii. *Sections of part 170 related to requirements about oral warnings and posting of treated areas.* Implementation of the requirements to both orally warn and post treated areas in the labeling requires implementation of § 170.120(a)(3) and (b)(3), which tell the employer the exceptions to the oral warning and treated-area posting requirements.

b. *Implementation of part 170 provisions that are generic to all pesticide uses.* The enforcement of the remaining or "generic" provisions (i.e. those that apply to all pesticides uses) in the final rule will begin April 15, 1994.

The phased implementation dates for part 170 are intended to allow time for EPA and cooperating organizations to develop, reproduce, and distribute the training and instructional materials necessary to encourage compliance. If part 170 implementation were to be triggered solely by the appearance of revised labeling, some users would have to comply with part 170 before instructional materials were available to assist them in doing so.

3. *Implementation of part 156.* The Agency is establishing two separate sale/distribution dates for registrants. The first date regulates the earliest date that a registrant is allowed to sell or distribute a pesticide product with labeling amended to include part 156 statements. This date is the effective date of part 170 (which is 60 days after publication of the final rule) plus 6 months. During this time the Agency will execute an implementation outreach program. The second date, 18 months after the effective date of part 170, is the time by which all affected pesticide products sold or distributed by

registrants would be required to contain the appropriate part 156 statements in their labeling.

In the past, EPA has not placed constraints on registrants as to how soon pesticide products bearing Agency-required changes to labeling could be sold or distributed; the emphasis has been on the maximum time registrants would be allowed for changing labeling. However, in the implementation of the Worker Protection Standard, registrants will not be allowed to sell or distribute pesticide products with labeling amended to include part 156 label-specific requirements or the generic part 170 reference statement prior to an established date. This constraint is to prevent pesticide labeling with the new worker protection statements pursuant to this final rule from becoming available to users before EPA and cooperating organizations can disseminate the information necessary to tell users how to comply with the requirements. Otherwise, users could face the dilemma of being required to comply with provisions without the necessary information on how to do so.

A summary of the implementation schedule is given in the following Table 1:

Table 1.—Implementation Time Table

Time	Part 156 Activities	Part 170 Activities
Publication in the Federal Register of part 170 and part 156 (notice to registrants of mandatory labeling changes).	Inform registrants of required label changes (LIP or PR notice).	Initiate outreach to regulated community to inform affected parties about the rule, particularly the accelerated provisions, i.e. the requirements in the labeling for restricted-entry intervals, treated area posting and oral notification to workers, and use of personal protective equipment.
60 days after publication.	Effective date.	Effective date, including the process for requesting exceptions to restricted-entry intervals.
6 months after effective date of part 156 and part 170.	Earliest date that products with amended labeling may be sold or distributed by registrants.	Start compliance efforts on new product-specific requirements on labeling (accelerated provisions of part 170).
April 15, 1994.		Start enforcement of part 170 "generic" provisions whenever a pesticide product with amended labeling is used.
18 months after part 156 and part 170 effective date (12 months after earliest sale or distribution date for registrants).	All pesticide products sold or distributed by registrants must bear labeling referencing part 170 and other part 156 labeling statements.	
36 months after part 156 and part 170 effective date.	Pesticide products sold/ distributed by any person must bear amended labeling.	

B. Registrant Compliance

A large number of products will be affected by the new requirements, and an orderly relabeling process is necessary to avoid confusion, to ensure clear and appropriate labeling to guide users, and to facilitate registrant compliance. Thus, the Agency has included in this preamble instructions to registrants and compliance deadlines for changes to pesticide labeling required by the new subpart K, part 156 ("Worker Protection Statements"). The Agency has tried to make the new labeling requirements as self-explanatory as possible to reduce the need for registrant inquiries.

1. *Applicability of part 156, subpart K statements.* This section provides guidance to registrants in determining which of their products may be affected by the new part 156 subpart K, whether existing worker protection statements should be retained, and how new part 156 subpart K labeling statements should be determined.

a. *Scope.* Products affected by part 156 subpart K are, with some exceptions, those products registered for use in the production of agricultural plants (40 CFR 156.200(b)). The scope of agricultural pesticides for purposes of subpart K is broad and refers to any product registered for use in the production of agricultural plants on farms, or in forests, nurseries, or greenhouses; these terms are defined in 40 CFR 170.3. Part 156, subpart K applies to products that may be applied directly to agricultural plants or to growing areas. Any such product must bear the subpart K statements, except as noted below.

Several types of products that may be registered for application on farms, or in forests, nurseries, or greenhouses need not bear the subpart K statements. These are defined by the exceptions to the handler applicability section of part 170 (40 CFR 170.202(b)). If a product has both exempted uses and covered uses, the subpart K statements must appear on labeling.

Under subpart K, a reference statement on the label will direct users to part 170, which contains more specific requirements than those listed in the labeling.

b. *Existing statements.* Various types of worker protection statements currently appear in the labeling of many agricultural products. Most of these statements will be modified or will be replaced by the new subpart K requirements. Several comments on the proposed rule requested clarification of the relationship between subpart K and PR Notice 83-2, which called for certain worker protection statements, based on part 170, to be placed on agricultural product labels. EPA is revoking PR Notice 83-2 effective as of April 21, 1993, and registrants of products subject to PR Notice 83-2 must modify their labeling according to subpart K requirements. Some products within the scope of subpart K were not subject to PR Notice 83-2, including products registered for uses in forests and in greenhouses, for use on nursery ornamentals, and for use on crops whose culture does not involve commonly recognized hand labor tasks.

In addition to PR Notice 83-2 statements, some products currently bear statements pertaining to REIs and PPE that were required through registration or a Registration Standard or Special Review decision on an active ingredient contained in the product. The status of existing REI and PPE statements will be governed by the relevant subpart K sections on these topics (40 CFR 156.208 and 156.212). The Agency will issue a PR Notice to registrants with detailed guidelines on

how to evaluate existing labeling statements and on what new labeling statements to adopt.

c. *New statements.* Four types of worker protection statements may apply to products covered by the new subpart K: General statements, REI statements, worker notification statements, and PPE statements.

i. *General.* All products must carry a standard reference statement alerting the user that the product must be used according to part 170 (40 CFR 156.206(b)). A standard statement prohibiting users from allowing a pesticide to contact nonhandlers directly or through drift also must appear on all products (40 CFR 156.206(a)). A different version of this statement was required by PR Notice 83–2; that version must be replaced by the revised version. Products required to use either DANGER or WARNING as signal words (toxicity category I or II products) also must use the Spanish signal word PELIGRO or AVISO on the label, and a phrase in Spanish instructing the reader to have the label explained before using the product (40 CFR 156.206(e)).

If the product contains an active ingredient that is an organophosphate or an *N*-methyl carbamate, this information must be in the labeling either as part of the product name or in the Statement of Practical Treatment (First Aid) section of the labeling (40 CFR 156.206(c)(1)). This information is required in the labeling to aid employers who want to provide cholinesterase monitoring programs for their employees.

If the product is a fumigant, its status as a fumigant must be conveyed as part of the product-name or product-type information, placed close to the product name (40 CFR 156.206(c)(2)).

ii. *Restricted entry.* Products covered by subpart K must have a standard REI statement. Fumigants will retain their current entry restrictions, but the statements must be converted to the format of the subpart K restricted-entry statements (40 CFR 156.208(d)). The standard restricted-entry statement (40 CFR 156.208(a)) includes the restricted-entry interval (determined by 40 CFR 156.208(c),(d),(e), or (f)).

Some existing labeling bears entry-restriction statements. In determining the appropriate subpart K restricted-entry interval (REI), three situations are possible:

First, a product that has a product-specific REI based on foliar or soil dissipation data for the product (or for each active ingredient in the product) that have been submitted to and accepted by EPA, must retain this REI (40 CFR 156.208(e)).

The second situation involves products that have an REI that is not product-specific. Here the existing REI must be compared to the REI that would apply using the criteria in 40 CFR 156.208(c); the longer of the two REIs would be the restricted-entry interval.

Third, a product that has no REI (this would include products prohibiting entry "until sprays have dried or dusts have settled" and other products) must use the criteria of 40 CFR 156.208(c) to determine the appropriate REI unless all data required to set a product-specific interval are submitted to and accepted by EPA and a specific REI is approved.

Under the criteria of 40 CFR 156.208(c), REIs are determined by comparing available acute toxicity data for the active ingredients in a product. Registrants must use any obtainable results of toxicity testing (i.e., toxicity category) for the three relevant routes of exposure (dermal toxicity, skin irritation effects, and eye irritation effects) for each active ingredient in the product. If necessary, formulators should seek verification of toxicity category information from their suppliers. In some circumstances, acute oral toxicity or the toxicity of a registered technical product may be used. Among the acute toxicity data used in the comparison, the most toxic toxicity category determines the REI: 48 hours for toxicity category I, 24 hours for toxicity category II, or 12 hours for toxicity category III and toxicity category IV (40 CFR 156.208(c)). When no acute toxicity data are available for one or more of the active ingredients, registrants must use the toxicity category of the formulated product indicated by the signal word in the comparison.

When the REI has been determined, the appropriate number of hours is inserted into the restricted-entry statement of 40 CFR 156.208(b), unless the REI varies crop by crop.

If a product contains a toxicity category I active ingredient that is a cholinesterase-inhibiting organophosphate ester, a statement must be added requiring a 72-hour REI when the product is applied outdoors in an area where the average annual rainfall is less than 25 inches a year (40 CFR 156.208(c)(2)(i)).

EPA reserves the right to modify any subpart K restricted-entry interval for a product in the future. For example, this may occur either at the beginning or end of a Special Review for an active ingredient in the product (40 CFR 156.204(a)) or on evaluation of foliar or soil dissipation data, or other relevant data, showing that a different REI is warranted (40 CFR 156.204(b)). Registrants, or others, may undertake to develop, at their discretion, foliar dissipation or other exposure data that would lead to the establishment of a product-specific REI; until that time, an interim REI will apply to the product.

iii. *Notification to workers.* Each product in toxicity category I for acute dermal toxicity or skin irritation potential, other products designated by EPA, and each fumigant that may be used in greenhouses must carry a standard statement indicating that workers must be given notification of the application both orally and by posting of treated areas (40 CFR 156.210). A definition of a fumigant appears in 40 CFR 156.203.

iv. *Personal protective equipment (PPE) and work clothing.* All products must bear statements specifying minimum PPE or work clothing as determined by subpart K. Appropriate PPE or work clothing is required by subpart K for all handling activities (40 CFR 156.212) and activities in treated areas before the expiration of an REI.

If a product has PPE or work clothing statements on the labeling, the registrant must compare these existing statements with the requirements of subpart K, and use the more protective or more specific item of PPE or work clothing for each area of the body to be protected. If product labeling prohibits the wearing of gloves or boots, such a prohibition must be retained on labeling as it is worded. The format of all PPE and work clothing statements should be that described in subpart K, even if a more protective or more specific item is being retained. The following are examples of comparisons of degree of protection or specificity between PPE items in subpart K and PPE items now on product labeling:

(1) A coverall is more protective than a long-sleeved shirt and long pants.

(2) A chemical-resistant (or liquidproof, waterproof, rubber, etc.) suit, rain gear or rain suit is more protective than a coverall or long-sleeved shirt and long pants.

(3) Chemical-resistant gloves are more protective than cotton, cloth, paper, or leather gloves.

(4) Chemical-resistant footwear is more protective than shoes and socks.

(5) Air-supplied or self-contained respirators are more protective than other classes or types of respirators.

(6) A cartridge or canister respirator is more protective than a dust/mist mask or dust/mist respirator.

As indicated below, certain words and phrases on existing labeling must be replaced by terms described in subpart K.

Unless the registrant has data that indicate a particular type of material(s)

is more chemically resistant to a particular pesticide product or a particular type of pesticide products, the labeling statements for the use of gloves in subpart K must be followed. "Chemical resistant" must be used instead of such terms as "liquidproof," "rubber," "natural rubber," "vinyl," "synthetic rubber," "impervious," "neoprene," "plastic," "impermeable," or "nonporous." The term "waterproof" must be used in place of "water-resistant" or other terms if the pesticide is used dry or as an aqueous solution.

Unless the registrant has data indicating that the NIOSH/MSHA approval number prefix listed in subpart K is inappropriate for a particular pesticide product or a particular type of pesticide product, NIOSH/MSHA approval number prefixes indicated in subpart K shall be substituted for the general phrase "NIOSH/MSHA approved" in respirator statements on existing labeling. For a dust/mist mask, the NIOSH/MSHA approval number prefix is "TC-21C." For a cartridge respirator, the NIOSH/MSHA approval number prefix is "TC-23C." For a canister respirator, the NIOSH/MSHA approval number is prefix "TC-14G." For a supplied-air respirator, the NIOSH/MSHA approval number prefix is "TC-19C." For a self-contained breathing apparatus (SCBA), the NIOSH/MSHA approval number prefix is TC-13F."

To determine the appropriate PPE requirements for handling activities, the table in 40 CFR 156.212(e) is used in conjunction with the acute toxicity data on the formulated product for each route of exposure listed in the table. Registrants must determine the toxicity category of the formulated product for acute dermal toxicity, skin irritation potential, eye irritation potential, and acute inhalation toxicity. If the acute toxicity data for dermal or inhalation exposure are not available, the acute oral toxicity may be used as a surrogate. (If acute toxicity data for any of these routes of exposure are not available, the toxicity category of the formulated product as a whole must be used as a substitute for each such route of exposure.) Given the toxicity category for each route of exposure, the table gives the appropriate item or items of PPE or work clothing necessary to protect that part of the body. All such items taken together comprise the basic "outfit" to be worn by the handler. This "outfit," in the form of a list of PPE and work clothing items, is inserted into a standardized handler PPE statement (40 CFR 156.212(d)(3)).

In addition to the basic handler outfit statement, statements related to exposure pattern are required for products in toxicity categories I and II (40 CFR 156.212(i)). For products that must be mixed or loaded, there must be a statement requiring the use of a chemical-resistant apron unless there is a requirement for a chemical-resistant suit (40 CFR 156.212(i)(1)). If overhead exposure is possible during handling, there must be a statement requiring the use of a wide-brimmed hat or a chemical-resistant hood (40 CFR 156.212(i)(2)). If equipment is used to mix, load, or apply the product, there must be a statement requiring the use of a chemical-resistant apron for persons who clean or repair equipment unless there is a requirement for a chemical-resistant suit (40 CFR 156.212(i)(3)).

If a product is sold as a concentrate and diluted for application, registrants may submit to the Agency or cite additional acute toxicity data on the diluted product. The PPE requirements for all handlers except mixer/loaders would then be based upon the data on the product as diluted for application.

The appropriate PPE and work clothing requirements for early-entry activities are the same as for applicators, except no respiratory protection device would be needed for early entry to pesticide-treated areas. In addition, the minimum PPE for early-entry activities consists of coveralls, chemical-resistant (or waterproof) gloves, shoes, and socks.

The Agency reserves the right to modify the subpart K requirements for PPE and work clothing for a product at some future time. This might occur at the beginning or end of a Special Review, or on review of data showing that different requirements are warranted.

d. *Labeling format*—i. *Language and location of labeling.* Specific language for worker protection labeling statements has been employed in subpart K to facilitate registrant compliance and to eliminate unnecessary variation among agricultural product labeling.

Each section of subpart K describing a required worker protection statement specifies a location on labeling for that statement. Most worker protection statements are required to be grouped near the beginning of the Directions for Use section of the product labeling under the heading Agricultural Use Requirements. General statements such as the reference to part 170 would appear first. The only statements required to appear elsewhere on labeling are the Spanish signal word and explanatory statement, which must appear close to the English signal word; the identification of the type of product (organophosphate or *N*-methyl carbamate), which must be associated with the product name or in the Statement of Practical Treatment (First Aid) section; identification of a fumigant, which must appear as part of or close to the product name; and the PPE statements, which must appear in the Hazards to Humans (and Domestic Animals) section of the labeling. At the discretion of the registrant, any existing worker protection statements that are not superseded or modified by subpart K may be relocated under this overall worker protection heading, unless this would reduce existing protection associated with nonagricultural uses.

ii. *New or amended product labeling.* As of April 21, 1993, labeling submitted with applications for new or amended registration must comply with subpart K. The Agency will review and approve labeling for new products under normal Agency procedures.

iii. *Existing products.* Registrants of products that are registered as of the effective date of subpart K and that fall within the scope of subpart K must revise their product labeling to comply with the new requirements in one of the following ways:

(1) *Subpart K labeling followed exactly.* The Agency is specifying precise wording and exact requirements for worker protection labeling so that registrants of existing products will be able to revise product labeling more easily within the timeframes established. If a registrant certifies that the Worker Protection Standard PR Notice wording is followed exactly for a specific product, no Agency approval is required. The registrant must submit the following:

(A) An Application for Amended Registration (EPA Form 8570-1). Under "Subject of Amendment" in section II of the application, the registrant must identify the subject of the amendment as "WORKER PROTECTION CERTIFICATION" and include a certification statement such as, "All products being sold or distributed after April 21, 1994, will be in compliance with the labeling requirements of 40 CFR part 156, subpart K."

(B) A copy of the product's revised labeling (draft or final) with the changes highlighted, preferably with a felt-tipped marker. The Agency may choose to review this labeling as a check on the correctness of the registrant's compliance with subpart K.

(2) *Subpart K labeling not followed exactly.* If a registrant wishes to use wording different from that required by the Worker Protection Standard PR Notice, an amended registration must be

approved. The registrant must submit the following:

(A) An Application for Amended Registration (EPA Form 8570-1). Under "Subject of Amendment" in section II of the application, the registrant must identify the subject of the amendment as "WORKER PROTECTION LABELING AMENDMENT" and include a statement such as, "The applicant requests the Agency to review proposed revised labeling text that differs from 40 CFR part 156, subpart K."

(B) Five copies of the product's proposed draft labeling with the changes highlighted, preferably with a felt-tipped marker.

EPA encourages registrants seeking amendments under section 3(b) to submit their applications as soon as possible after the effective date of this regulation. EPA cannot assure that these amendments to registration will be approved in time to incorporate the revised language on the labeling by the deadlines. As stated above, the Agency intends that the standard and implementing labeling statements be put in place as quickly as possible. Thus, it is unlikely that EPA will grant an extension of time merely because a special labeling amendment has been proposed. This policy does not preclude registrants from requesting special amendments to registration; registrants, however, are required to meet applicable deadlines for labeling changes regardless of the status of any special amendment to registration.

iv. *Where to send amended application.* Applications for amended registration and other labeling must be submitted to the address listed in the Worker Protection Standard PR Notice and must be received on or before April 21, 1994. After this date, no product may be distributed or sold by the registrant (or a supplemental registrant) unless it is in compliance with the new subpart K. After October 23, 1995, all products distributed or sold by any person must bear labeling statements in compliance with the new subpart K.

v. *Earliest distribution or sale.* Finally, it should be noted that no product with the subpart K labeling statements may be distributed or sold by a registrant prior to April 21, 1993, even though the registrant may submit certification and EPA may approve new or amended products with subpart K labeling prior to that date.

vi. *Failure to comply.* If the items listed above, such as a certification statement, and, if applicable, the final printed labeling are not submitted on or before the date specified above, the Agency may issue a "Notice of Intent to Cancel" under FIFRA section 6(b). If, after a certification is reviewed, the Agency determines that the registrant has incorrectly labeled the product, the product may be deemed to be misbranded in violation of FIFRA section 12(a)(1)(E) or the Agency may issue a "Notice of Intent to Cancel" under FIFRA section 6(b).

C. EPA Communication and Training Efforts

EPA has been engaged in the promotion of pesticide safety in agriculture for many years. In the course of this program, the Agency has developed working relationships with other Federal, State, and private organizations with similar objectives. It has sponsored the production and distribution of many types of pesticide safety materials. With the promulgation of the revised Worker Protection Standard, the Agency intends to develop appropriate materials to inform pesticide users and agricultural workers of the new requirements and to facilitate compliance.

1. *Product labeling.* The labeling of each agricultural pesticide product subject to part 170 will indicate, by means of a reference statement, that the product must be used according to these regulations. Requirements that vary from product to product, such as restricted-entry intervals and personal protective equipment, will appear as specific labeling statements, while requirements that do not vary among products, such as provision of decontamination sites, will not be repeated in each product's labeling.

2. *Development of materials.* To assist agricultural employers and pesticide users in complying with the revised Worker Protection Standard, the Agency intends to develop or to cooperate in the development of new educational materials and to revise some existing educational materials. These materials may be used by agricultural employers, migrant health clinics, Cooperative Extension offices, unions, commodity organizations, and similar groups.

a. *Compliance materials.* In addition to the promulgation of part 170 standard, the Agency intends to develop compliance guides and audiovisual compliance programs for agricultural employers and handler employers. These guides and programs will summarize and explain the regulations and will assist agricultural employers and handler employers to understand their responsibilities under part 170.

b. *Training programs for handlers and workers.* Existing written and audiovisual training programs on pesticide safety are expected to be revised as one source of assistance to agricultural employers and handler employers in training their employees in pesticide safety. The training programs also may be used by others such as migrant health clinics, State agencies, and worker organizations to train agricultural workers and handlers. The training programs that are planned are handbooks, slides/tapes and videos in English and Spanish. They will be designed to meet the pesticide safety training requirements of the new part 170.

c. *Pesticide safety poster.* A bilingual pesticide safety poster for agricultural workers, entitled "Be Safe With Pesticides/Use Pesticidas Con Cuidado," has been developed by the Agency and has been distributed widely with the assistance of cooperating organizations. EPA plans to revise the poster and intends that display of this revised poster will fulfill the pesticide safety poster requirement of part 170.

d. *Guidelines on the selection and use of personal protective equipment (PPE).* Numerous comments from the public addressed the need for more information and guidance on the selection, use, and maintenance of PPE, including the avoidance of heat stress. The Agency has developed informational materials to provide guidance to pesticide users on these topics. The Agency also intends to develop guidance documents on cholinesterase monitoring to assist employers who have or want to have such a program.

3. *Liaison with other agencies and organizations.* In the past, EPA has had the assistance of a number of governmental agencies, farmworker service organizations, and trade associations in communicating with the agricultural community. The Agency will continue to work with these groups to inform affected persons of their rights and responsibilities under the revised standard, to assist in the reproduction and distribution of educational materials developed by the Agency and to encourage compliance on the part of their members and clients.

D. National Compliance Monitoring Strategy

The Agency's approach to enforcement of the Worker Protection Standard will be based on development of a National Compliance Monitoring Strategy for worker protection.

Pesticide use enforcement under FIFRA is dependent upon two broad authorities, the authority to regulate the distribution and sale of pesticides and the authority to require that registered pesticides be used according to their labeling. In most States, enforcement is

by State regulatory agencies through Cooperative Enforcement Agreements with EPA. EPA intends to assure enforcement of part 170 primarily through these agreements. The National Compliance Monitoring Strategy will be developed in partnership with the State regulatory agencies and will guide all enforcement activities related to this regulation.

To achieve maximum compliance, the Agency plans a major communication effort to inform the regulated community of the new requirements. The registrant of a pesticide product subject to part 170 will be governed by the timeframes for product relabeling laid out above. Once a relabeled product is used, it must be used in accordance with its labeling or the user will be in violation of FIFRA section 12(a)(2)(G). The product will bear a reference statement notifying the user that the product must be used in accordance with part 170.

The relationship between State and Federal entities in the enforcement of pesticide use regulations is governed by FIFRA section 26(a). With the exception of Nebraska, Wyoming, and (in part) Colorado, all States have primary use enforcement authority and have entered into Cooperative Enforcement Agreements with EPA. EPA regional offices annually negotiate the terms of these agreements with State regulatory agencies. Starting in fiscal year 1990, these agreements have included a specific section on worker protection enforcement activities. EPA expects that individual State compliance monitoring strategies will be developed once the National Compliance Monitoring Strategy is completed. These strategies will describe inspection and complaint response schemes and compliance communication activities to be conducted in each State. Development of interagency coordination agreements among various State agencies concerned with pesticide use and worker safety may be part of each State's strategy. EPA also anticipates that registrant compliance with worker-protection-related registration requirements will be monitored through activities agreed upon under Cooperative Enforcement Agreements.

Toward the accomplishment of these goals, money has been allocated to the States in EPA's budget for fiscal years 1990, 1991, and 1992 for the development of worker protection programs and related compliance activities. In States where Cooperative Enforcement Agreements are not in place, EPA regional inspectors will conduct compliance monitoring programs based on the National Compliance Monitoring Strategy for this regulation.

VII. Public Docket

Documents relied upon by the Agency in the development of this final rule, including public comments submitted on the proposed rule, have been given the document control number OPP–300164A and are available for public inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays, at the Office of Pesticide Programs' Document Control Office, Rm. 1132, CM #2, 1921 Jefferson Davis Highway, Arlington, VA.

VIII. Regulatory Requirements

A. Executive Order 12291

Under Executive Order 12291, a Regulatory Impact Analysis (RIA) has been developed and has been submitted to the Office of Management and Budget (OMB). This document is available for public inspection at the address given at the beginning of this Notice. A summary of the document follows.

EPA believes that the benefits that will accrue to agricultural workers and handlers from implementation of the WPS include the reduction in lost time from the workforce, reduced medical expenses, and increased well-being and productivity through being less affected by pesticide poisoning. These and any related benefits cannot be adequately quantified with available data. The Agency is convinced that the benefits to society from avoided incidents of acute, allergic, and delayed adverse effects from occupational exposures to agricultural-plant pesticides exceed the costs attributable to this final rule.

The final rule would serve to protect a labor force of 3.9 million exposed either directly or indirectly to pesticides as a result of their occupations on farms, in forests, in nurseries, in greenhouses, or in commercial pesticide-handling operations. This work force includes 1.4 million hired workers and handlers on farms, 92,000 hired workers and handlers in nurseries and greenhouses, and 10,000 hired workers and handlers in forests. There are also 38,000 commercial handlers who handle agricultural-plant pesticides. In addition, 2.36 million agricultural-establishment operators and unpaid workers (presumably family members) handle agricultural-plant pesticides or perform tasks related to the production of agricultural plants on farms, nurseries, and greenhouses.

EPA estimates that the incremental costs of this final rule will be about $95 million in the first year and about $50 million annually thereafter. To facilitate comparison with other regulations, EPA has also calculated the incremental costs by annualizing them over 10 years at several illustrative interest rates. Using 3% and 10%, the annualized costs of this final rule would be about $54 and $56 million per year respectively. The annual cost of the rule is therefore expected to be $50 to $60 million dollars, while the estimated annual benefits of this final rule include avoiding 8,000 to 16,000 physician-diagnosed (nonhospitalized) acute and allergic pesticide poisoning incidents, avoiding about 300 hospitalized acute and allergic pesticide poisoning incidents, and avoiding potentially important numbers of cancer cases, serious developmental defects, stillbirths, persistent neurotoxic effects, and nondiagnosed acute and allergic poisoning incidents.

B. Regulatory Flexibility Act

This final rule has been reviewed under the Regulatory Flexibility Act of 1980 (Pub. L. 96-354; 94 Stat. 1164; 5 U.S.C. 601-612) for its impact on small businesses. The results of that review have been incorporated into the Regulatory Impact Analysis and are discussed in more detail in that document (available for public inspection at the address listed at the beginning of this Notice). A summary follows.

The revised final rule exempts owners of agricultural establishments and members of their immediate family from the provisions pertaining to safety training and information, decontamination facilities, notification of pesticide treatments, and emergency assistance. EPA presumes that owners and family members will provide themselves and each other with these protections, and has chosen not to regulate such behavior. This decision represents a significant exemption for small entities, since about 45 percent (251,000 of 560,000) of the agricultural establishments within the scope of the WPS do not hire labor and are, therefore, exempt from all but a few of the final rule's requirements.

As a result, the analysis reveals that agricultural establishments without hired labor will bear a low cost-burden as compared to agricultural establishments with hired labor. The incremental continuing annual costs averaged across all establishments without hired labor are about $15 per establishment, whereas the costs averaged across all hired-labor agricultural establishments are about $140 per establishment per year. Non-hired-labor feed and grain farms, which make up the largest crop segment, will incur incremental continuing annual

costs averaging about $10 per farm. Hired-labor feed and grain farms will incur incremental continuing annual costs averaging about $55 per farm.

None of the provisions of the regulation provide a direct efficiency of size to establishments with many employees. Most of the provisions are totally or mostly variable (per worker) costs. However, two provisions that contain some fixed (per establishment) cost elements are training and notification. Even these provisions are not directly efficiency-of-size cost factors, due to: (1) The diverse and sporadic nature of pesticide-use and labor-use practices, and (2) the exceptions and options in the rule that allow employers to select the most cost-effective option for their particular circumstance.

The variability in the cost-factors due to these exceptions and options is difficult to quantify. Therefore, the analysis of the impact on 1-worker agricultural establishments versus the impact on 10-worker agricultural establishments is a "worst-case" analysis that assumes that all costs of training and notification are fixed rather than variable. This results in an overestimate of the impact of this rule to 1-worker agricultural establishments. However, even with the overestimate, results indicate that the burden is not unreasonably higher for such small establishments. The average incremental continuing annual cost due to all provisions for a feed and grain farm with one hired employee is about $25 (or $25 per employee). For a feed and grain farm with 10 hired employees, it is about $115 per year (or $10 per employee). For vegetable/fruit/nut establishments with one hired employee, the average incremental continuing annual cost for all provisions is about $95 per establishment (or $95 per employee). The cost is about $650 (or $65 per employee) for a vegetable/fruit/nut establishment with 10 hired employees.

The Agency has determined that the burden on small agricultural businesses does not outweigh the risk to handlers and workers employed in those businesses, and that further exemptions from the regulation for small businesses would not be warranted.

C. Paperwork Reduction Act

The information collection requirements contained in this rule have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and have been assigned OMB Control Number 2070–0060.

The reporting burden for registrants is estimated to average 5.9 hours per product, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460 and to the Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

List of Subjects in 40 CFR Parts 156 and 170

Environmental protection, Labeling, Pesticides and pests, Intergovernmental relations, Occupational safety and health, Reporting and recordkeeping requirements.

Dated: August 13, 1992.

William K. Reilly,

Administrator.

Therefore, chapter I of Title 40 is amended in subchapter E, to read as follows:

PART 156—LABELING REQUIREMENTS FOR PESTICIDES AND DEVICES

1. In part 156:

a. The authority citation for part 156 continues to read as follows:

Authority: 7 U.S.C. 136-136y.

b. Section 156.10 is designated as subpart A, and the subpart heading is added, § 156.10 is amended by revising paragraph (i)(2)(viii), and subparts B through J are added and reserved, to read as follows:

Subpart A—General Provisions

§ 156.10 Labeling requirements.

* * * * *

(i) * * *

(2) * * *

(viii) Worker protection statements meeting the requirements of subpart K of this part.

* * * * *

c. New subpart K, consisting of §§ 156.200, 156.203, 156.204, 156.206, 156.208, 156.210, and 156.212, is added, to read as follows:

Subpart K—Worker Protection Statements

Sec.

Subpart K—Worker Protection Statements

§ 156.200 Scope and applicability.

(a) *Scope.* (1) This subpart prescribes statements that must be placed on the pesticide label and in pesticide labeling. These statements incorporate by reference the Worker Protection Standard, part 170 of this chapter. The requirements addressed in these statements are designed to reduce the risk of illness or injury resulting from workers' and pesticide handlers' occupational exposures to pesticides used in the production of agricultural plants on agricultural establishments as defined in § 170.3 of this chapter. These statements refer to specific workplace practices designed to reduce or eliminate exposure and to respond to emergencies that may arise from the exposures that may occur.

(2) This subpart prescribes interim requirements that must be placed on the pesticide label and in pesticide labeling. These interim requirements pertain to restricted-entry intervals, personal protective equipment, and notification. On a case-by-case basis, these interim requirements will be reviewed and may be revised during reregistration or other agency review processes.

(b) *Applicability.* (1) The requirements of this subpart apply to each pesticide product that bears directions for use in the production of any agricultural plant on any agricultural establishment as defined in § 170.3 of this chapter, or whose labeling reasonably permits such use.

(2) The requirements of this subpart do not apply to a product that bears directions solely for uses excepted by § 170.202(b) of this chapter.

(c) *Effective dates.* (1) The effective date of this subpart is October 20, 1992.

(2) No pesticide product bearing labeling amended and revised as required by this subpart shall be distributed or sold by a registrant prior to April 21, 1993.

(3) No product to which this subpart applies shall be distributed or sold without amended labeling by any registrant after April 21, 1994.

(4) No product to which this subpart applies shall be distributed or sold without amended labeling by any person after October 23, 1995.

§ 156.203 Definitions.

Terms in this subpart have the same meanings as they do in the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. In addition, the following terms, as used in this subpart, shall have the meanings stated below:

Fumigant means any pesticide product that is a vapor or gas or forms a vapor or gas on application and whose method of pesticidal action is through the gaseous state.

Restricted-entry interval means the time after the end of a pesticide application during which entry to the treated area is restricted.

§ 156.204 Modification and waiver of requirements.

(a) *Modification on Special Review.* If the Agency concludes in accordance with § 154.25(c) of this chapter that a pesticide should be placed in Special Review because the pesticide meets or exceeds the criteria for human health effects of § 154.7(a)(1)(2) or (6) of this chapter, the Agency may modify the personal protective equipment required for handlers or early-entry workers or both, the restricted-entry intervals, or the notification to workers requirements.

(b) *Other modifications.* The Agency, pursuant to this subpart and authorities granted in FIFRA sections 3, 6, and 12, may, on its initiative or based on data submitted by any person, modify or waive the requirements of this subpart, or permit or require alternative labeling statements. Supporting data may be either data required by Subdivisions U or K of the Pesticide Assessment Guidelines or data from medical, epidemiological, or health effects studies. The Pesticide Assessment Guidelines contain the standards for conducting acceptable tests, guidance on evaluation and reporting of data, definition of terms, further guidance on when data are required, and examples of acceptable protocols. They are available through the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161. A registrant who wishes to modify any of the statements required in § § 156.206, 156.208, 156.210, or 156.212 must submit an application for amended registration unless specifically directed otherwise by the Agency.

§ 156.206 General statements.

(a) *Application restrictions.* Each product shall bear the statement: "Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application." This statement shall be near the beginning of the DIRECTIONS FOR USE section of the labeling under the heading AGRICULTURAL USE REQUIREMENTS.

(b) *40 CFR Part 170 reference statement.* (1) Each product shall bear the reference statement: "Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170." This statement shall be placed on the product label under the heading AGRICULTURAL USE REQUIREMENTS.

(2) Each product shall bear the statement: "This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label [in this labeling] about [use any of the following that are applicable] personal protective equipment, restricted-entry interval, and notification to workers." These statements shall be placed immediately following the reference statement required by paragraph (b)(1) of this section, or they shall be placed in the supplemental product labeling under the heading AGRICULTURAL USE REQUIREMENTS.

(3) If the statements in paragraph (b)(2) of this section are included in supplemental labeling rather than on the label of the pesticide container, the container label must contain this statement immediately following the statement required in paragraph (b)(1) of this section: "Refer to supplemental labeling entitled AGRICULTURAL USE REQUIREMENTS in the DIRECTIONS FOR USE section of the labeling for information about this standard."

(4) If the statements in paragraph (b)(2) of this section are included in supplemental labeling, they must be preceded immediately by the statement in paragraph (b)(1) of this section under the heading AGRICULTURAL USE REQUIREMENTS in the labeling.

(c) *Product-type identification.* (1) If the product contains an organophosphate (i.e., an organophosphorus ester that inhibits cholinesterase) or an *N*-methyl carbamate (i.e., an *N*-methyl carbamic acid ester that inhibits cholinesterase), the label shall so state. The statement shall be associated with the product name or product-type identification or shall be in the STATEMENT OF PRACTICAL TREATMENT or FIRST AID section of the label.

(2) If the product is a fumigant, the label shall so state. The identification shall appear:

(i) As part of the product name; or

(ii) Close to the product name, as part of the product-type identification or as a separate phrase or sentence.

(d) *State restrictions.* Each product shall bear the statement: "For any requirements specific to your State, consult the agency in your State responsible for pesticide regulation." This statement shall be under the heading AGRICULTURAL USE REQUIREMENTS in the labeling.

(e) *Spanish warning statements.* If the product is classified as toxicity category I or toxicity category II according to the criteria in § 156.10(h)(1), the signal word shall appear in Spanish in addition to English followed by the statement, "Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. [If you do not understand the label, find some one to explain it to you in detail.)" The Spanish signal word "PELIGRO" shall be used for products in toxicity category I, and the Spanish signal word "AVISO" shall be used for products in toxicity category II. These statements shall appear on the label close to the English signal word.

(Approved by the Office of Management and Budget under control number 2070-0060.)

§ 156.208 Restricted-entry statements.

(a) *Requirement.* Each product with a restricted-entry interval shall bear the following statement: "Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI)." This statement shall be under the heading AGRICULTURAL USE REQUIREMENTS in the labeling.

(b) *Location of specific restricted-entry interval statements.* (1) If a product has one specific restricted-entry interval applicable to all registered uses of the product on agricultural plants, the restricted-entry interval for the product shall appear as a continuation of the statement required in paragraph (a) of this section and shall appear as follows: "of X hours" or "of X days" or "until the acceptable exposure level of X ppm or mg/m^3 is reached."

(2) If different restricted-entry intervals have been established for some crops or some uses of a product, the restricted-entry statement in paragraph (b)(1) of this section shall be associated on the labeling of the product with the directions for use for each crop each use to which it applies, immediately preceded or immediately followed by the words "Restricted-entry interval" (or the letters "REI").

(c) *Restricted-entry interval based on toxicity of active ingredient*—(1) *Determination of toxicity category.* A restricted-entry interval shall be established based on the acute toxicity of the active ingredients in the product. For the purpose of setting the restricted-entry interval, the toxicity category of each active ingredient in the product shall be determined by comparing the obtainable data on the acute dermal toxicity, eye irritation effects, and skin irritation effects of the ingredient to the criteria of § 156.10(h)(1). The most toxic of the applicable toxicity categories that are obtainable for each active ingredient shall be used to determine the restricted-entry interval for that product. If no acute dermal toxicity data are obtainable, data on acute oral toxicity also shall be considered in this comparison. If no applicable acute toxicity data are obtainable on the active ingredient, the toxicity category corresponding to the signal word of any registered manufacturing-use product that is the source of the active ingredient in the end-use product shall be used. If no acute toxicity data are obtainable on the active ingredients and no toxicity category of a registered manufacturing-use product is obtainable, the toxicity category of the end-use product (corresponding to the signal word on its labeling) shall be used.

(2) *Restricted-entry interval for sole active ingredient products.* (i) If the product contains only one active ingredient and it is in toxicity category I by the criteria in paragraph (c)(1) of this section, the restricted-entry interval shall be 48 hours. If, in addition, the active ingredient is an organophosphorus ester that inhibits cholinesterase and that may be applied outdoors in an area where the average annual rainfall for the application site is less than 25 inches per year, the following statement shall be added to the restricted-entry interval statement: "(72 hours in outdoor areas where average annual rainfall is less than 25 inches a year)."

(ii) If the product contains only one active ingredient and it is in toxicity category II by the criteria in paragraph (c)(1) of this section, the restricted-entry interval shall be 24 hours.

(iii) If the product contains only active ingredients that are in toxicity category III or IV by the criteria in paragraph (c)(1) of this section, the restricted-entry interval shall be 12 hours.

(3) *Restricted-entry interval for multiple active ingredient products.* If the product contains more than one active ingredient, the restricted-entry interval (including any associated statement concerning use in arid areas under paragraph (c)(2)(i) of this section) shall be based on the active ingredient that requires the longest restricted-entry interval as determined by the criteria in this section.

(d) *Exception for fumigants.* The criteria for determining restricted-entry intervals in paragraph (c) of this section shall not apply to any product that is a fumigant. For fumigants, any existing restricted-entry interval (hours, days, or acceptable exposure level) shall be retained. Entry restrictions for fumigants have been or shall be established on a case-by-case basis at the time of registration, reregistration, or other Agency review process.

(e) *Existing product-specific restricted-entry intervals.* (1) A product-specific restricted-entry interval, based on data collected in accordance with § 158.390 of this chapter and Subdivision K of the Pesticide Assessment Guidelines, shall supersede any restricted-entry interval applicable to the product under paragraph (c) of this section.

(2) Product-specific restricted-entry intervals established for pesticide products or pesticide uses that are not covered by part 170 of this chapter shall remain in effect and shall not be placed under the heading AGRICULTURAL USE REQUIREMENTS in the labeling.

(f) *Existing interim restricted-entry intervals.* (1) An interim restricted-entry interval established by the Agency before the effective date of this subpart will continue to apply unless a longer restricted-entry interval is required by paragraph (c) of this section.

(2) Existing interim restricted-entry intervals established by the Agency for pesticide products or pesticide uses not covered by part 170 of this chapter shall remain in effect and shall not be placed under the heading AGRICULTURAL USE REQUIREMENTS in the labeling.

(Approved by the Office of Management and Budget under control number 2070-0060.)

§ 156.210 Notification-to-workers statements.

(a) *Requirement.* Each product that meets the requirements of paragraph (b) of this section shall bear the posting and oral notification statements prescribed below. The statements shall be in the DIRECTIONS FOR USE section of the labeling under the heading AGRICULTURAL USE REQUIREMENTS.

(b) *Notification to workers of pesticide application.* (1) Each product that contains any active ingredient classified as toxicity category I for either acute dermal toxicity or skin irritation potential under the criteria in § 156.10(h)(1) shall bear the statement: "Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas." If no acute dermal toxicity data are obtainable, data on acute oral toxicity of the active ingredient shall be considered instead. If no data on acute dermal toxicity, skin irritation potential, or acute oral toxicity are obtainable on the active ingredient, the toxicity category corresponding to the signal word of any registered manufacturing-use product that is the source of the active ingredient in the end-use product shall be used. If none of the applicable acute toxicity data are obtainable on the active ingredient and no toxicity category of the registered manufacturing-use product is obtainable, the toxicity category of the end-use product corresponding to the product's signal word shall be used.

(2) Each product that is a fumigant and is registered for use in a greenhouse (or whose labeling allows use in a greenhouse) shall bear the statement: "For greenhouse applications, notify workers of the application by warning them orally and by posting warning signs outside all entrances to the greenhouse."

(Approved by the Office of Management and Budget under control number 2070-0060.)

§ 156.212 Personal protective equipment statements.

(a) *Requirement.* Each product shall bear the personal protective equipment statements prescribed in paragraphs (d) through (j) of this section.

(b) *Exceptions.* (1) If personal protective equipment were required for a product before the effective date of this subpart, the existing requirements shall be retained on the labeling wherever they are more specific or more protective (as specified in EPA guidance materials) than the requirements in the table in paragraph (e) of this section.

(2) Any existing labeling statement that prohibits the use of gloves or boots overrides the corresponding requirement in paragraph (e) of this section and must be retained on the labeling.

(3) If the product labeling contains uses that are not covered by part 170 of this chapter, the registrant may adopt the personal protective equipment required in this section for those uses. However, if the personal protective equipment required in this section would not be sufficiently protective or would be onerously overprotective for uses not covered by part 170 of this chapter, the registrant must continue to apply the existing personal protective equipment requirements to those uses. The labeling must indicate which

personal protective equipment requirements apply to uses covered by part 170 of this chapter and which personal protective equipment requirements apply to other uses.

(c) *Location of personal protective equipment statements*—(1) *Personal protective equipment statements for pesticide handlers.* Personal protective equipment statements for pesticide handlers shall be in the HAZARDS TO HUMANS (AND DOMESTIC ANIMALS) section of the labeling. The required statements may be combined to avoid redundancy as long as the requirements and conditions under which they apply are identified.

(2) Personal protective equipment statements for early-entry workers. Personal protective equipment statements for early-entry workers shall be placed in the DIRECTIONS FOR USE section of the labeling under the heading AGRICULTURAL USE REQUIREMENTS and immediately after the restricted-entry statement required in § 156.208(a).

(d) *Personal protective equipment statements for pesticide handlers.* (1) The table in paragraph (e) of this section specifies minimum requirements for personal protective equipment (as defined in § 170.240 of this chapter) and work clothing for pesticide handlers. This personal protective equipment requirement applies to any product that presents a hazard through any route of exposure identified in the table (acute dermal toxicity, skin irritation potential, acute inhalation toxicity, and eye irritation potential).

(2) The requirement for personal protective equipment is based on the acute toxicity category of the end-use product for each route of exposure as defined by § 156.10(h)(1). If data to determine the acute dermal toxicity or the acute inhalation toxicity are not obtainable, the acute oral toxicity shall be used as a surrogate to determine the personal protective equipment requirements for that route of exposure. If data to determine the acute toxicity of the product by a specific route of exposure (including acute oral toxicity in lieu of acute dermal or acute inhalation toxicity) are not obtainable, the toxicity category corresponding to the signal word of the end-use product shall be used to determine personal protective equipment requirements for that route of exposure. If the signal word is "CAUTION," toxicity category III will be used.

(3) The minimum personal protective equipment and work clothing requirements specified in this section shall be included in a statement such as the following: "Applicators and other handlers must wear: (body protection statement); (glove statement, if applicable); (footwear statement, if applicable); (protective eyewear statement, if applicable); (respirator statement, if applicable)." The format of statements given in this paragraph is optional, but it is recommended for clarity.

(e) *Summary of personal protective equipment requirements.* The following Table 1 summarizes the personal protective equipment requirements by route of exposure and toxicity category:

TABLE 1.—MINIMUM PERSONAL PROTECTIVE EQUIPMENT (PPE) AND WORK CLOTHING FOR HANDLING ACTIVITIES

Route of Exposure	Toxicity Category of End-Use Product			
	I	II	III	IV
Dermal Toxicity or Skin Irritation Potential[1]	Coveralls worn over long-sleeved shirt and long pants	Coveralls worn over short-sleeved shirt and short pants	Long-sleeved shirt and long pants	Long-sleeved shirt and long pants
	Socks	Socks	Socks	Socks
	Chemical-resistant footwear	Chemical-resistant footwear	Shoes	Shoes
	Chemical-resistant gloves[2]	Chemical-resistant gloves[2]	Chemical-resistant gloves[2]	No minimum[4]
Inhalation Toxicity	Respiratory protection device[3]	Respiratory protection device[3]	No minimum[4]	No minimum[4]
Eye Irritation Potential	Protective eyewear	Protective eyewear	No minimum[4]	No minimum[4]

[1] If dermal toxicity and skin irritation potential are in different toxicity categories, protection shall be based on the more toxic (lower numbered) category.
[2] For labeling language for chemical-resistant gloves, see paragraph (f) of this section.
[3] For labeling language for respiratory protection device, see paragraphs (g) and (h) of this section.
[4] Although no minimum PPE is required by this section for this toxicity category and route of exposure, the Agency may require PPE on a product-specific basis.

(f) *Chemical-resistant gloves labeling statements for pesticide handlers.* If the table in paragraph (e) of this section indicates that chemical-resistant gloves are required, the glove statement shall be as specified in paragraph (f)(2), (3), (4), or (5) of this section.

(1) *Exception.* The registrant shall specify a glove type other than that selected through the criteria in paragraphs (f)(2) through (5) of this section if information available to the registrant indicates that such a glove type is more appropriate or more protective than the glove type specified in this section. The statement must specify the particular types of chemical-resistant glove (such as nitrile, butyl, neoprene, and/or barrier-laminate).

(2) *Solid formulations.* For products formulated and applied as solids or formulated as solids and diluted solely with water for application, the glove statement shall specify: "waterproof gloves."

(3) *Aqueous-based formulations.* For products formulated and applied as a water-based liquid or formulated as a water-based liquid and diluted solely with water for application, the glove statement may specify: "waterproof gloves" instead of the statement in paragraph (f)(4) of this section.

(4) *Other liquid formulations.* For products formulated or diluted with liquids other than water, the glove statement shall specify: "chemical-resistant (such as nitrile or butyl) gloves."

(5) *Gaseous formulations and applications.* For products formulated or applied as gases, any existing glove statement established before the effective date of this subpart, including any glove prohibition statement, will continue to apply. If no glove statement or glove prohibition now exists, the glove statement shall specify "chemical-resistant (such as nitrile or butyl) gloves."

(g) *Existing respirator requirement for pesticide handlers on product labeling*—(1) *General requirement.* If a statement placed on a product's labeling before the effective date of this subpart indicates

that respiratory protection is required, that requirement for protection shall be retained. The statement must specify, or be amended to specify, one of the following respirator types and the appropriate MSHA/NIOSH approval number prefix:

(i) Dust/mist filtering respirator with MSHA/NIOSH/ approval number prefix TC-21C; or

(ii) Respirator with an organic-vapor-removing cartridge and a prefilter approved for pesticides with MSHA/NIOSH approval number prefix TC-23C or with a canister approved for pesticides with MSHA/NIOSH approval number prefix TC-14G; or

(iii) Supplied-air respirator with MSHA/NIOSH approval number prefix TC-19C or self-contained breathing apparatus (SCBA) with MSHA/NIOSH approval number TC-13F.

(2) *Respirator type already specified on labeling.* If the existing respiratory protection requirement specifies a respirator type, it shall be retained. The respirator statement must be revised, if necessary, to conform to the wording in paragraph (g)(1) of this section.

(3) *Respirator type not already specified on labeling.* If the existing respiratory protection requirement on product labeling does not specify a respirator type as listed in paragraph (g)(1) of this section, the specific respirator type shall be that required in the criteria in paragraphs (g)(3)(ii) through (vi) of this section.

(i) *Exception.* The registrant shall specify a different type of respiratory protection device if information, such as vapor pressure value, is available to the registrant to indicate that the type of respiratory protection device selected through the criteria in paragraphs (g)(3)(ii) through (vi) of this section would not be adequately protective, or might increase risks to the user unnecessarily.

(ii) *Gases applied outdoors.* For products that are formulated or applied as a gas (space and soil fumigants) and that may be used outdoors, the respiratory protection statement shall be: "For handling activities outdoors, use either a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)."

(iii) *Gases used in enclosed areas.* For products that are formulated or applied as a gas (space and soil fumigants) and that may be used in greenhouses or other enclosed areas, the respiratory protection statement shall specify: "For handling activities in enclosed areas, use either a supplied-air respirator with MSHA/NIOSH approval number prefix TC-19C, or a self-contained breathing apparatus (SCBA) with MSHA/NIOSH approval number TC-13F."

(iv) *Solids.* For products that are formulated and applied as solids, the respiratory protection statement shall specify: "dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)."

(v) *Liquids in toxicity category I.* For products that are formulated or applied as liquids, and, as formulated, have an acute inhalation toxicity (or its surrogate as specified in paragraph (d)(2) of this section) in category I, the respiratory protection statement shall specify: "either a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix 14G)."

(vi) *Liquids in toxicity category II.* For products that are formulated or applied as liquids, and, as formulated, have an acute inhalation toxicity (or its surrogate as specified in paragraph (d)(2) of this section) in category II, the respiratory protection statement shall specify: "For handling activities during (select uses applicable to the product: airblast, mistblower, pressure greater than 40 p.s.i. with fine droplets, smoke, mist, fog, aerosol or direct overhead) exposures, wear either a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix 14G). For all other exposures, wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)."

(h) *New respirator requirement established for pesticide handlers in this part*—(1) *General requirement.* If the table in paragraph (e) of this section indicates a respiratory protection device is required, and existing product labeling has no respiratory protection requirement, the registrant shall add a respiratory protection statement that specifies a: "dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)."

(2) *Exception.* The registrant shall specify a different type of respiratory protection device if information, such as vapor pressure value, is available to the registrant to indicate that the type of respiratory protection device required in paragraph (h)(1) of this section would not be adequately protective or might increase risks to the user unnecessarily.

(i) *Additional personal protective equipment requirements for pesticide handlers.* In addition to the minimum personal protective equipment and work clothing requirements given in the table in paragraph (e) of this section, the labeling statement for any product in toxicity category I or II on the basis of dermal toxicity or skin irritation potential (or their surrogate as specified in paragraph (d)(2) of this section), shall include the following personal protective equipment instructions, additions, or substitutions as applicable:

(1) If the product is not ready-to-use and there is no existing requirement for a chemical-resistant suit, the following statement shall be included: "Mixers/Loaders: add a chemical-resistant apron."

(2) If the application of the product may result in overhead exposure to any handler (for example, applicator exposure during airblast spraying of orchards or flagger exposure during aerial application), the following statement shall be included: "Overhead Exposure: wear chemical-resistant headgear."

(3) If any type of equipment other than the product container may be used to mix, load, or apply the product, and there is no requirement for a chemical-resistant protective suit, the following statement shall be included: "For Cleaning Equipment: add a chemical-resistant apron."

(j) *Personal protective equipment for early-entry workers.* This paragraph specifies minimum requirements for personal protective equipment (as defined in § 170.240 of this chapter) and work clothing for early-entry workers.

(1) For all pesticide products, add the statement: "For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear: (list the body protection, glove, footwear, protective eyewear, and protective headgear, if applicable, statements specified for applicators and other handlers, but omit any respiratory protection statement)."

(2) If the body protection statement in the personal protective equipment requirement for handlers specifies a long-sleeved shirt and long pants, "coveralls" must be specified in the statement of personal protective equipment for early-entry workers.

(3) If there is no statement requiring gloves and no prohibition against gloves for applicators and other handlers under the heading HAZARDS TO HUMANS (AND DOMESTIC ANIMALS) in the labeling, add a requirement for

"waterproof gloves" in the statement of personal protective equipment for early-entry workers.

(Approved by the Office of Management and Budget under control number 2070-0060.)

2. By revising part 170 to read as follows:

PART 170—WORKER PROTECTION STANDARD

Subpart A—General Provisions

Subpart B—Standard for Workers

Subpart C—Standard for Pesticide Handlers

Authority: 7 U.S.C. 136w.

Subpart A—General Provisions

§ 170.1 Scope and purpose.

This part contains a standard designed to reduce the risks of illness or injury resulting from workers' and handlers' occupational exposures to pesticides used in the production of agricultural plants on farms or in nurseries, greenhouses, and forests and also from the accidental exposure of workers and other persons to such pesticides. It requires workplace practices designed to reduce or eliminate exposure to pesticides and establishes procedures for responding to exposure-related emergencies.

§ 170.3 Definitions.

Terms used in this part have the same meanings they have in the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. In addition, the following terms, when used in this part, shall have the following meanings:

Agricultural employer means any person who hires or contracts for the services of workers, for any type of compensation, to perform activities related to the production of agricultural plants, or any person who is an owner of or is responsible for the management or condition of an agricultural establishment that uses such workers.

Agricultural establishment means any farm, forest, nursery, or greenhouse.

Agricultural plant means any plant grown or maintained for commercial or research purposes and includes, but is not limited to, food, feed, and fiber plants; trees; turfgrass; flowers, shrubs; ornamentals; and seedlings.

Chemigation means the application of pesticides through irrigation systems.

Commercial pesticide handling establishment means any establishment, other than an agricultural establishment, that:

(1) Employs any person, including a self-employed person, to apply on an agricultural establishment, pesticides used in the production of agricultural plants.

(2) Employs any person, including a self-employed person, to perform on an agricultural establishment, tasks as a crop advisor.

Crop advisor means any person who is assessing pest numbers or damage, pesticide distribution, or the status or requirements of agricultural plants. The term does not include any person who is performing hand labor tasks.

Early entry means entry by a worker into a treated area on the agricultural establishment after a pesticide application is complete, but before any restricted-entry interval for the pesticide has expired.

Farm means any operation, other than a nursery or forest, engaged in the outdoor production of agricultural plants.

Forest means any operation engaged in the outdoor production of any agricultural plant to produce wood fiber or timber products.

Fumigant means any pesticide product that is a vapor or gas, or forms a vapor or gas on application, and whose method of pesticidal action is through the gaseous state.

Greenhouse means any operation engaged in the production of agricultural plants inside any structure or space that is enclosed with nonporous covering and that is of sufficient size to permit worker entry. This term includes, but is not limited to, polyhouses, mushroom houses, rhubarb houses, and similar structures. It does not include such structures as malls, atriums, conservatories, arboretums, or office buildings where agricultural plants are present primarily for aesthetic or climatic modification.

Hand labor means any agricultural activity performed by hand or with hand tools that causes a worker to have substantial contact with surfaces (such as plants, plant parts, or soil) that may contain pesticide residues. These activities include, but are not limited to, harvesting, detasseling, thinning, weeding, topping, planting, sucker removal, pruning, disbudding, roguing, and packing produce into containers in the field. Hand labor does not include operating, moving, or repairing irrigation or watering equipment or performing the tasks of crop advisors.

Handler means any person, including a self-employed person:

(1) Who is employed for any type of compensation by an agricultural establishment or commercial pesticide handling establishment to which subpart C of this part applies and who is:

(i) Mixing, loading, transferring, or applying pesticides.

(ii) Disposing of pesticides or pesticide containers.

(iii) Handling opened containers of pesticides.

(iv) Acting as a flagger.

(v) Cleaning, adjusting, handling, or repairing the parts of mixing, loading, or application equipment that may contain pesticide residues.

(vi) Assisting with the application of pesticides.

(vii) Entering a greenhouse or other enclosed area after the application and before the inhalation exposure level listed in the labeling has been reached or one of the ventilation criteria established by this part (§ 170.110(c)(3)) or in the labeling has been met:

(A) To operate ventilation equipment.

(B) To adjust or remove coverings used in fumigation.

(C) To monitor air levels.

(viii) Entering a treated area outdoors after application of any soil fumigant to adjust or remove soil coverings such as tarpaulins.

(ix) Performing tasks as a crop advisor:

(A) During any pesticide application.

(B) Before the inhalation exposure level listed in the labeling has been reached or one of the ventilation criteria established by this part (§ 170.110(c)(3)) or in the labeling has been met.

(C) During any restricted-entry interval.

(2) The term does not include any person who is only handling pesticide containers that have been emptied or cleaned according to pesticide product labeling instructions or, in the absence of such instructions, have been subjected to triple-rinsing or its equivalent.

Handler employer means any person who is self-employed as a handler or who employs any handler, for any type of compensation.

Immediate family includes only spouse, children, stepchildren, foster children, parents, stepparents, foster parents, brothers, and sisters.

Nursery means any operation engaged in the outdoor production of any agricultural plant to produce cut flowers and ferns or plants that will be used in their entirety in another location. Such plants include, but are not limited to, flowering and foliage plants or trees; tree seedlings; live Christmas trees; vegetable, fruit, and ornamental transplants; and turfgrass produced for sod.

Owner means any person who has a present possessory interest (fee, leasehold, rental, or other) in an agricultural establishment covered by this part. A person who has both leased such agricultural establishment to another person and granted that same person the right and full authority to manage and govern the use of such agricultural establishment is not an owner for purposes of this part.

Restricted-entry interval means the time after the end of a pesticide application during which entry into the treated area is restricted.

Treated area means any area to which a pesticide is being directed or has been directed.

Worker means any person, including a self-employed person, who is employed for any type of compensation and who is performing activities relating to the production of agricultural plants on an agricultural establishment to which subpart B of this part applies. While persons employed by a commercial pesticide handling establishment are performing tasks as crop advisors, they are not workers covered by the requirements of subpart B of this part.

§ 170.5 Effective date and compliance dates.

(a) *Effective date.* The effective date for this part, including § 170.112(e), shall be October 20, 1992.

(b) *Accelerated provisions.* The compliance date shall be April 21, 1993, for:

(1) Section 170.112(a) through (c)(3);

(2) Section 170.112(d)(1) through (d)(2)(ii);

(3) The requirement of § 170.112(c)(3) as referenced in § 170.112(d)(2)(iii);

(4) The requirement of § 170.112(c)(3) as referenced in § 170.112(e)(5);

(5) Section 170.120(a)(3); and

(6) Section 170.120(b)(3).

(c) *All other provisions.* The compliance date for all other provisions of this part shall be April 15, 1994.

§ 170.7 General duties and prohibited actions.

(a) *General duties.* The agricultural employer or the handler employer, as appropriate, shall:

(1) Assure that each worker subject to subpart B of this part or each handler subject to subpart C of this part receives the protections required by this part.

(2) Assure that any pesticide to which subpart C of this part applies is used in a manner consistent with the labeling of the pesticide, including the requirements of this part.

(3) Provide, to each person who supervises any worker or handler, information and directions sufficient to assure that each worker or handler receives the protections required by this part. Such information and directions shall specify which persons are responsible for actions required to comply with this part.

(4) Require each person who supervises any worker or handler to assure compliance by the worker or handler with the provisions of this part and to assure that the worker or handler receives the protections required by this part.

(b) *Prohibited actions.* The agricultural employer or the handler employer shall not take any retaliatory action for attempts to comply with this part or any action having the effect of preventing or discouraging any worker or handler from complying or attempting to comply with any requirement of this part.

§ 170.9 Violations of this part.

(a) Under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 *et seq.*) (FIFRA) section 12(a)(2)(G) it is unlawful for any person "to use any registered pesticide in a manner inconsistent with its labeling." When this part is referenced on a label, users must comply with all of its requirements except those that are inconsistent with product-specific instructions on the labeling. For the purposes of this part, EPA interprets the term "use" to include:

(1) Preapplication activities, including, but not limited to:

(i) Arranging for the application of the pesticide;

(ii) Mixing and loading the pesticide; and

(iii) Making necessary preparations for the application of the pesticide, including responsibilities related to worker notification, training of handlers, decontamination, use and care of personal protective equipment, emergency information, and heat stress management.

(2) Application of the pesticide.

(3) Post-application activities necessary to reduce the risks of illness and injury resulting from handlers' and workers' occupational exposures to pesticide residues during the restricted-entry interval plus 30 days. These activities include, but are not limited to, responsibilities related to worker training, notification, and decontamination.

(4) Other pesticide-related activities, including, but not limited to, providing emergency assistance, transporting or storing pesticides that have been opened, and disposing of excess pesticides, spray mix, equipment wash waters, pesticide containers, and other pesticide-containing materials.

(b) A person who has a duty under this part, as referenced on the pesticide product label, and who fails to perform that duty, violates FIFRA section 12(a)(2)(G) and is subject to a civil penalty under section 14. A person who knowingly violates section 12(a)(2)(G) is subject to section 14 criminal sanctions.

(c) FIFRA section 14(b)(4) provides that a person is liable for a penalty under FIFRA if another person employed by or acting for that person violates any provision of FIFRA. The term "acting for" includes both employment and contractual relationships.

(d) The requirements of this part, including the decontamination requirements, shall not, for the purposes of section 653(b)(1) of Title 29 of the U.S. Code, be deemed to be the exercise of statutory authority to prescribe or enforce standards or regulations affecting the general sanitary hazards addressed by the OSHA Field Sanitation Standard, 29 CFR 1928.110, or other agricultural, nonpesticide hazards.

Subpart B—Standard for Workers

§ 170.102 Applicability of this subpart.

(a) *Requirement.* Except as provided by paragraph (b) of this section, this subpart applies when any pesticide product is used on an agricultural establishment in the production of agricultural plants.

(b) *Exceptions.* This subpart does not apply when any pesticide is applied on an agricultural establishment in the following circumstances:

(1) For mosquito abatement, Mediterranean fruit fly eradication, or similar wide-area public pest control programs sponsored by governmental entities.

(2) On livestock or other animals, or in or about animal premises.

(3) On plants grown for other than commercial or research purposes, which may include plants in habitations, home fruit and vegetable gardens, and home greenhouses.

(4) On plants that are in ornamental gardens, parks, and public or private lawns and grounds that are intended only for aesthetic purposes or climatic modification.

(5) By injection directly into agricultural plants. Direct injection does not include "hack and squirt," "frill and spray," chemigation, soil-incorporation, or soil-injection.

(6) In a manner not directly related to the production of agricultural plants, including, but not limited to, structural pest control, control of vegetation along rights-of-way and in other noncrop areas, and pasture and rangeland use.

(7) For control of vertebrate pests.

(8) As attractants or repellents in traps.

(9) On the harvested portions of agricultural plants or on harvested timber.

(10) For research uses of unregistered pesticides.

(c) *Exemptions.* For the purposes of this subpart, the owners of agricultural establishments need not assure that the protections in § 170.112(c)(5) through (9); § 170.112(c)(5) through (9) as referenced in §§ 170.112(d)(2)(iii) and 170.112(e); and §§ 170.120, 170.122, 170.130, 170.135, 170.150, and 170.160 are provided to themselves and members of their immediate family while they are performing tasks related to the production of agricultural plants on their own agricultural establishment. However, they must provide any protections required by these sections to other workers and other persons who are not members of their immediate family and are encouraged to provide the protections to themselves and members of their families.

§ 170.110 Restrictions associated with pesticide applications.

(a) *Farms and forests.* During the application of any pesticide on a farm or in a forest, the agricultural employer shall not allow or direct any person, other than an appropriately trained and equipped handler, to enter or to remain in the treated area.

(b) *Nurseries.* In a nursery, during any pesticide application described in column A of Table 1 of this paragraph, the agricultural employer shall not allow or direct any person, other than an appropriately trained and equipped handler, to enter or to remain in the area specified in column B of Table 1 of this paragraph. After the application is completed, until the end of any restricted-entry interval, the entry-restricted area is the treated area.

Table 1.—Entry-Restricted Areas in Nurseries During Pesticide Applications

A. During Application of a Pesticide:	B. Workers are Prohibited in:
(1) (a) Applied: (i) Aerially, or (ii) In an upward direction, or (iii) Using a spray pressure greater than 150 psi, or	Treated area plus 100 feet in all directions on the nursery
(b) Applied as a: (i) Fumigant, or (ii) Smoke, or (iii) Mist, or (iv) Fog, or (v) Aerosol.	
(2)(a) Applied downward using: (i) A height of greater than 12 inches from the planting medium, or (ii) A fine spray, or (iii) A spray pressure greater than 40 psi and less than 150 psi.	Treated are plus 25 feet in all directions on the nursery
(b) Not as in 1 or 2(a) above but for which a respiratory protection device is required for application by the product labeling.	
(3) Applied otherwise.	Treated area

(c) *Greenhouses.* (1) When a pesticide application described in column A of Table 2 under paragraph (c)(4) of this section takes place in a greenhouse, the agricultural employer shall not allow or direct any person, other than an appropriately trained and equipped handler, to enter or to remain in the area specified in column B of Table 2 until the time specified in column C of Table 2 has expired.

(2) After the time specified in column C of Table 2 under paragraph (c)(4) of this section has expired, until the expiration of any restricted-entry interval, the agricultural employer shall not allow or direct any worker to enter or to remain in the treated area as specified in column D of Table 2 under paragraph (c)(4) of this section, except as provided in § 170.112.

(3) When column C of Table 2 under paragraph (c)(4) of this section specifies that ventilation criteria must be met, ventilation shall continue until the air concentration is measured to be equal to or less than the inhalation exposure level the labeling requires to be achieved. If no inhalation exposure level is listed on the labeling, ventilation shall continue until after:

(i) Ten air exchanges are completed; or

(ii) Two hours of ventilation using fans or other mechanical ventilating systems; or

(iii) Four hours of ventilation using vents, windows or other passive ventilation; or

(iv) Eleven hours with no ventilation followed by 1 hour of mechanical ventilation; or

(v) Eleven hours with no ventilation followed by 2 hours of passive ventilation; or

(vi) Twenty-four hours with no ventilation.

(4) The following Table 2 applies to paragraphs (c)(1), (2), and (3) of this section.

Table 2.—Greenhouse Entry Restrictions Associated With Pesticide Applications

A. When a Pesticide is Applied:	B. Workers are Prohibited in:	C. Until:	D. After the Expiration of Time in Column C Until the Restricted-Entry Interval Expires, the Entry-Restricted Area is:
(1) As a fumigant	Entire greenhouse plus any adjacent structure that cannot be sealed off from the treated area	The ventilation criteria of paragraph (c)(3) of this section are met	No entry restrictions after criteria in column C are met
(2) As a (i) Smoke, or (ii) Mist, or (iii) Fog, or (iv) Aerosol	Entire enclosed area	The ventilation criteria of paragraph (c)(3) of this section are met	Entire enclosed area is the treated area
(3) Not in 1 or 2 above, and for which a respiratory protection device is required for application by the product labeling	Entire enclosed area	The ventilation criteria of paragraph (c)(3) of this section are met	Treated area
(4) Not in 1, 2, or 3 above, and: (i) From a height of greater than 12 in. from the planting medium, or (ii) As a fine spray, or (iii) Using a spray pressure greater than 40 psi	Treated area plus 25 feet in all directions in the enclosed area	Application is complete	Treated area
(5) Otherwise	Treated area	Application is complete	Treated area

§ 170.112 Entry restrictions.

(a) *General restrictions.* (1) After the application of any pesticide on an agricultural establishment, the agricultural employer shall not allow or direct any worker to enter or to remain in the treated area before the restricted-entry interval specified on the pesticide labeling has expired, except as provided in this section.

(2) Entry-restricted areas in greenhouses are specified in column D in Table 2 under § 170.110(c)(4).

(3) When two or more pesticides are applied at the same time, the restricted-entry interval shall be the longest of the applicable intervals.

(4) The agricultural employer shall assure that any worker who enters a treated area under a restricted-entry interval as permitted by paragraphs (c), (d), and (e) of this section uses the personal protective equipment specified in the product labeling for early-entry workers and follows any other requirements on the pesticide labeling regarding early entry.

(b) *Exception for activities with no contact.* A worker may enter a treated area during a restricted-entry interval if the agricultural employer assures that both of the following are met:

(1) The worker will have no contact with anything that has been treated with the pesticide to which the restricted-entry interval applies, including, but not limited to, soil, water, air, or surfaces of plants; and

(2) No such entry is allowed until any inhalation exposure level listed in the labeling has been reached or any ventilation criteria established by § 170.110(c)(3) or in the labeling have been met.

(c) *Exception for short-term activities.* A worker may enter a treated area during a restricted-entry interval for short-term activities if the agricultural employer assures that the following requirements are met:

(1) No hand labor activity is performed.

(2) The time in treated areas under a restricted-entry interval for any worker does not exceed 1 hour in any 24-hour period.

(3) No such entry is allowed for the first 4 hours following the end of the application, and no such entry is allowed thereafter until any inhalation exposure level listed in the labeling has been reached or any ventilation criteria established by § 170.110(c)(3) or in the labeling have been met.

(4) The personal protective equipment specified on the product labeling for early entry is provided to the worker. Such personal protective equipment shall conform to the following standards:

(i) Personal protective equipment (PPE) means devices and apparel that are worn to protect the body from contact with pesticides or pesticide residues, including, but not limited to, coveralls, chemical-resistant suits, chemical-resistant gloves, chemical-resistant footwear, respiratory protection devices, chemical-resistant aprons, chemical-resistant headgear, and protective eyewear.

(ii) Long-sleeved shirts, short-sleeved shirts, long pants, short pants, shoes, socks, and other items of work clothing are not considered personal protective equipment for the purposes of this section and are not subject to the requirements of this section, although pesticide labeling may require that such work clothing be worn during some activities.

(iii) When "chemical-resistant" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of the pesticide being used through the material during use.

(iv) When "waterproof" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of water or aqueous solutions through the material during use.

(v) When a "chemical-resistant suit" is specified by the product labeling, it shall be a loose-fitting, one- or two-piece, chemical-resistant garment that covers, at a minimum, the entire body except head, hands, and feet.

(vi) When "coveralls" are specified by the product labeling, they shall be a loose-fitting, one- or two-piece garment, such as a cotton or cotton and polyester coverall, that covers, at a minimum, the entire body except head, hands, and feet. The pesticide product labeling may specify that the coveralls be worn over a layer of clothing. If a chemical-resistant suit is substituted for coveralls, it need not be worn over a layer of clothing.

(vii) Gloves shall be of the type specified by the product labeling. Gloves or glove linings made of leather, cotton, or other absorbent materials must not be worn for early-entry activities unless these materials are listed on the product labeling as acceptable for such use. If chemical-resistant gloves with sufficient durability and suppleness are not obtainable for tasks with roses or other plants with sharp thorns, leather gloves may be worn over chemical-resistant liners. However, once leather gloves have been worn for this use, thereafter they shall be worn only with chemical-resistant liners and they shall not be worn for any other use.

(viii) When "chemical-resistant footwear" is specified by the product labeling, it shall be one of the following types of footwear: chemical-resistant shoes, chemical-resistant boots, or chemical-resistant shoe coverings worn over shoes or boots. If chemical-resistant footwear with sufficient durability and a tread appropriate for wear in rough terrain is not obtainable for workers, then leather boots may be worn in such terrain.

(ix) When "protective eyewear" is specified by the product labeling, it shall be one of the following types of eyewear: goggles; face shield; safety glasses with front, brow, and temple protection; or a full-face respirator.

(x) When "chemical-resistant headgear" is specified by the product labeling, it shall be either a chemical-resistant hood or a chemical-resistant hat with a wide brim.

(5) The agricultural employer shall assure that the worker, before entering the treated area, either has read the product labeling or has been informed, in a manner that the worker can understand, of all labeling requirements related to human hazards or precautions, first aid, symptoms of poisoning, personal protective equipment specified for early entry, and any other labeling requirements related to safe use.

(6) The agricultural employer shall assure that:

(i) Workers wear the personal protective equipment correctly for its intended purpose and use personal protective equipment according to manufacturer's instructions.

(ii) Before each day of use, all personal protective equipment is inspected for leaks, holes, tears, or worn places, and any damaged equipment is repaired or discarded.

(iii) Personal protective equipment that cannot be cleaned properly is disposed of in accordance with any applicable Federal, State, and local regulations.

(iv) All personal protective equipment is cleaned according to manufacturer's instructions or pesticide product labeling instructions before each day of reuse. In the absence of any such instructions, it shall be washed thoroughly in detergent and hot water.

(v) Before being stored, all clean personal protective equipment is dried thoroughly or is put in a well-ventilated place to dry.

(vi) Personal protective equipment contaminated with pesticides is kept separately and washed separately from any other clothing or laundry.

(vii) Any person who cleans or launders personal protective equipment is informed that such equipment may be contaminated with pesticides, of the potentially harmful effects of exposure to pesticides, and of the correct way(s) to handle and clean personal protective equipment and to protect themselves when handling equipment contaminated with pesticides.

(viii) All clean personal protective equipment is stored separately from personal clothing and apart from pesticide-contaminated areas.

(ix) Each worker is instructed how to put on, use, and remove the personal protective equipment and is informed about the importance of washing thoroughly after removing personal protective equipment.

(x) Each worker is instructed in the prevention, recognition, and first aid treatment of heat-related illness.

(xi) Workers have a clean place(s) away from pesticide-storage and pesticide-use areas for storing personal clothing not in use; putting on personal protective equipment at the start of any exposure period; and removing personal protective equipment at the end of any exposure period.

(7) When personal protective equipment is required by the labeling of any pesticide for early entry, the agricultural employer shall assure that no worker is allowed or directed to perform the early-entry activity without implementing, when appropriate, measures to prevent heat-related illness.

(8) During any early-entry activity, the agricultural employer shall provide a decontamination site in accordance with § 170.150.

(9) The agricultural employer shall not allow or direct any worker to wear home or to take home personal protective equipment contaminated with pesticides.

(d) *Exception for an agricultural emergency.* (1) An "agricultural emergency" means a sudden occurrence or set of circumstances which the agricultural employer could not have anticipated and over which the agricultural employer has no control, and which requires entry into a treated area during a restricted-entry interval, when no alternative practices would prevent or mitigate a substantial economic loss. A substantial economic loss means a loss in profitability greater than that which would be expected based on the experience and fluctuations of crop yields in previous years. Only losses caused by the agricultural emergency specific to the affected site and geographic area are considered. The contribution of mismanagement cannot be considered in determining the loss.

(2) A worker may enter a treated area under a restricted-entry interval in an agricultural emergency to perform tasks, including hand labor tasks, necessary to mitigate the effects of the agricultural emergency, if the agricultural employer assures that all the following criteria are met:

(i) A State, Tribal, or Federal Agency having jurisdiction declares the existence of circumstances that could cause an agricultural emergency on that agricultural establishment.

(ii) The agricultural employer determines the agricultural establishment is subject to the circumstances declared under paragraph (d)(2)(i) of this section that result in an agricultural emergency meeting the criteria of paragraph (d)(1) of this section.

(iii) The requirements of paragraphs (c)(3) through (9) of this section are met.

(e) *Exception requiring Agency approval.* The Agency may, in accordance with paragraphs (e)(1) through (3) of this section, grant an exception from the requirements of this section. An exception may be withdrawn in accordance with paragraph (e)(6) of this section.

(1) *Requesting an exception.* A request for an exception must be submitted to the Director, Office of Pesticide Programs (H-7501C), Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460 and must be accompanied by two copies of the following information:

(i) The name, address, and telephone number of the submitter.

(ii) The time period for which the exception is requested.

(iii) A description of the crop(s) and specific crop production task(s) for which the exception is requested. Such a description must include an explanation as to the necessity of applying pesticides of a type and at a frequency such that the restricted-entry interval would interfere with necessary and

time-sensitive hand labor tasks for the period for which the exception is sought.

(iv) A description of the geographic area for which the exception is requested. If the exception request is for a limited geographic area, the explanation must include a description as to why the circumstances of exposure or economic impact resulting from the prohibition of routine hand labor tasks during the restricted-entry interval are unique to the geographic area named in the exception.

(v) An explanation as to why, for each requested crop-task combination, alternative practices would not be technically or financially viable. Such alternative practices might include: rescheduling the pesticide application or hand labor activity; using a non-chemical pest control alternative; using an alternative to the hand labor tasks, such as machine cultivation; or substituting a pesticide with a shorter restricted-entry interval. This information should include estimates or data on per acre revenue and cost of production for the crop and area for which the exception is requested. These estimates or data should include: the situation prior to implementation of this final rule, the situation after implementation of this final rule if the exception is not granted, the situation after implementation of this final rule if the exception is granted, and specific information on individual factors which cause differences in revenues and costs among the three situations.

(vi) A description or documentation of the safety and feasibility of such an exception, including, but not limited to, the feasibility of performing the necessary hand labor activity while wearing the personal protective equipment required for early entry for the pesticide(s) expected to be applied, the means of mitigating heat-related illness concerns, the period of time required daily per worker to perform the hand labor activity, any suggested methods of reducing the worker's exposure, and any other mitigating factors, such as the availability of running water for routine and emergency decontamination and mechanical devices that would reduce the workers' contact with the treated surfaces. The information should include the costs associated with early-entry, such as decontamination facilities, special information and training for the workers, heat stress avoidance procedures, and provision, inspection, cleaning, and maintenance of personal protective equipment. EPA will not grant exceptions where the costs of early entry equal or exceed the expected loss in value of crop yield or quality.

(2) *Notice of receipt.* (i) When a request for an exception is submitted to the Agency along with all of the information required in paragraph (e)(1) of this section, the Agency shall issue a notice in the **Federal Register** stating that an exception is being considered, describing the nature of the exception, and allowing at least 30 days for interested parties to comment.

(ii) If a request for an exception is submitted to the Agency without all of the information required in paragraph (e)(1) of this section, the Agency shall return the request to the submitter.

(3) *Exception decision.* EPA will publish in the **Federal Register** its decision whether to grant the request for exception. EPA will base its decision on whether the benefits of the exception outweigh the costs, including the value of the health risks attributable to the exception. If the exception is granted, the notice will state the nature of and reasons for the exception.

(4) *Presumptive denial.* (i) Except as provided in paragraph (e)(4)(ii) of this section, persons requesting an exception may assume that the exception has been denied if EPA has not issued its decision whether to grant the exception within 9 months from the comment-closure date specified in the **Federal Register** notice in which the Agency announced, in accordance with paragraph (e)(2) of this section, that it would consider the exception.

(ii) Persons requesting an exception may not assume that the request has been denied as provided by paragraph (e)(4)(i) of this section if the Agency has taken action to extend its review period for a specified time interval due to the complexity of the exception request or to the number of exception requests concurrently under Agency review. EPA shall state the reason(s) for the delay in issuing a decision on the exception request. A notice of such an action may be published in the **Federal Register** or persons who requested the exception may be directly notified of the action.

(5) *Agricultural employer duties.* When a worker enters a treated area during a restricted-entry interval under an exception granted under paragraph (e) of this section, the agricultural employer shall assure that the requirements of paragraphs (c)(3) through (9) of this section are met, unless the notice granting the exception specifically indicates otherwise.

(6) *Withdrawing an exception.* An exception may be withdrawn by the Agency at any time if the Agency receives poisoning information or other data that indicate that the health risks imposed by this early-entry exception are unacceptable or if the Agency receives other information that indicates that the exception is no longer necessary or prudent. If the Agency determines that an exception should be withdrawn, it will publish a notice in the **Federal Register**, stating the basis for its determination. Affected parties would then have 30 days to request a hearing on the Agency's determination. The exception, however, would be discontinued as of the date specified by EPA in the notice, which may include any of the 30-day period and the time required for any subsequent hearing process. Thereafter the Agency will decide whether to withdraw the exception and will publish a notice in the **Federal Register** stating its decision.

§ 170.120 Notice of applications.

(a) *Notification to workers of pesticide applications in greenhouses.* The agricultural employer shall notify workers of any pesticide application in the greenhouse in accordance with this paragraph.

(1) All pesticide applications shall be posted in accordance with paragraph (c) of this section.

(2) If the pesticide product labeling has a statement requiring both the posting of treated areas and oral notification to workers, the agricultural employer shall also provide oral notification of the application to the worker in accordance with paragraph (d) of this section.

(3) Notice need not be given to a worker if the agricultural employer can assure that one of the following is met:

(i) From the start of the application until the end of the application and during any restricted-entry interval, the worker will not enter, work in, remain in, or pass through the greenhouse; or

(ii) The worker applied (or supervised the application of) the pesticide for which the notice is intended and is aware of all information required by paragraphs (d)(1) through (3) of this section.

(b) *Notification to workers on farms, in nurseries, or in forests of pesticide applications.* The agricultural employer shall notify workers of any pesticide application on the farm or in the nursery or forest in accordance with this paragraph.

(1) If the pesticide product labeling has a statement requiring both the posting of treated areas and oral notification to workers, the agricultural employer shall post signs in accordance with paragraph (c) of this section and shall provide oral notification of the

application to the worker in accordance with paragraph (d) of this section.

(2) For any pesticide other than those for which the labeling requires both posting and oral notification of applications, the agricultural employer shall give notice of the application to the worker either by the posting of warning signs in accordance with paragraph (c) of this section or orally in accordance with paragraph (d) of this section, and shall inform the workers as to which method of notification is in effect.

(3) Notice need not be given to a worker if the agricultural employer can assure that one of the following is met:

(i) From the start of the application until the end of the application and during any restricted-entry interval, the worker will not enter, work in, remain in, or pass through on foot the treated area or any area within 1/4 mile of the treated area; or

(ii) The worker applied (or supervised the application of) the pesticide for which the notice is intended and is aware of all information required by (d)(1) through (3) of this section.

(c) *Posted warning signs.* The agricultural employer shall post warning signs in accordance with the following criteria:

(1) The warning sign shall have a background color that contrasts with red. The words "DANGER" and "PELIGRO," plus "PESTICIDES" and "PESTICIDAS," shall be at the top of the sign, and the words "KEEP OUT" and "NO ENTRE" shall be at the bottom of the sign. Letters for all words must be clearly legible. A circle containing an upraised hand on the left and a stern face on the right must be near the center of the sign. The inside of the circle must be red, except that the hand and a large portion of the face must be in a shade that contrasts with red. The length of the hand must be at least twice the height of the smallest letters. The length of the face must be only slightly smaller than the hand. Additional information such as the name of the pesticide and the date of application may appear on the warning sign if it does not detract from the appearance of the sign or change the meaning of the required information. A black-and-white example of a warning sign meeting these requirements, other than the size requirements, follows:

BILLING CODE 6560-50-F

DANGER PELIGRO
PESTICIDES PESTICIDAS

KEEP OUT
NO ENTRE

BILLING CODE 6560-50-C

(2) The sign shall be at least 14 inches by 16 inches in size, and the letters shall be at least 1 inch in height unless a smaller sign and smaller letters are necessary because the treated area is too small to accommodate a sign of this size. If a smaller sign is used, it must meet the proportions and other requirements described in paragraph (c)(1) of this section.

(3) On farms and in forests and nurseries, the signs shall be visible from all usual points of worker entry to the treated area, including at least each access road, each border with any labor camp adjacent to the treated area, and each footpath and other walking route that enters the treated area. When there are no usual points of worker entry, signs shall be posted in the corners of the treated area or in any other location affording maximum visibility.

(4) In greenhouses, the signs shall be posted so they are visible from all usual points of worker entry to the treated area including each aisle or other walking route that enters the treated area. When there are no usual points of worker entry to the treated area, signs shall be posted in the corners of the treated area or in any other location affording maximum visibility.

(5) The signs shall:

(i) Be posted no sooner than 24 hours before the scheduled application of the pesticide.

(ii) Remain posted throughout the application and any restricted-entry interval.

(iii) Be removed within 3 days after the end of the application and any restricted-entry interval and before agricultural-worker entry is permitted, other than entry permitted by § 170.112.

(6) The signs shall remain visible and legible during the time they are posted.

(7) When several contiguous areas are to be treated with pesticides on a rotating or sequential basis, the entire area may be posted. Worker entry, other than entry permitted by § 170.112, is prohibited for the entire area while the signs are posted.

(d) *Oral warnings.* The agricultural employer shall provide oral warnings to workers in a manner that the worker can understand. If a worker will be on the premises during the application, the warning shall be given before the application takes place. Otherwise, the warning shall be given at the beginning of the worker's first work period during which the application is taking place or the restricted-entry interval for the pesticide is in effect. The warning shall consist of:

(1) The location and description of the treated area.

(2) The time during which entry is restricted.

(3) Instructions not to enter the treated area until the restricted-entry interval has expired.

§ 170.122 Providing specific information about applications.

When workers are on an agricultural establishment and, within the last 30 days, a pesticide covered by this subpart has been applied on the establishment or a restricted-entry interval has been in effect, the agricultural employer shall display, in accordance with this section, specific information about the pesticide.

(a) *Location, accessibility, and legibility.* The information shall be displayed in the location specified for the pesticide safety poster in § 170.135(d) and shall be accessible and legible, as specified in § 170.135(e) and (f).

(b) *Timing.* (1) If warning signs are posted for the treated area before an application, the specific application information for that application shall be posted at the same time or earlier.

(2) The information shall be posted before the application takes place, if workers will be on the establishment during application. Otherwise, the information shall be posted at the beginning of any worker's first work period.

(3) The information shall continue to be displayed for at least 30 days after the end of the restricted-entry interval (or, if there is no restricted-entry interval, for at least 30 days after the end of the application) or at least until workers are no longer on the establishment, whichever is earlier.

(c) *Required information.* The information shall include:

(1) The location and description of the treated area.

(2) The product name, EPA registration number, and active ingredient(s) of the pesticide.

(3) The time and date the pesticide is to be applied.

(4) The restricted-entry interval for the pesticide.

§ 170.124 Notice of applications to handler employers.

Whenever handlers who are employed by a commercial pesticide handling establishment will be performing pesticide handling tasks on an agricultural establishment, the agricultural employer shall provide to the handler employer, or assure that the handler employer is aware of, the following information concerning any areas on the agricultural establishment that the handler may be in (or may walk within 1/4 mile of) and that may be treated with a pesticide or that may be under a restricted-entry interval while the handler will be on the agricultural establishment:

(a) Specific location and description of any such areas; and

(b) Restrictions on entering those areas.

§ 170.130 Pesticide safety training.

(a) *General requirement—(1) Agricultural employer assurance.* The agricultural employer shall assure that each worker, required by this section to be trained, has been trained according to this section during the last 5 years, counting from the end of the month in which the training was completed.

(2) *Requirement for workers performing early-entry activities.* Before a worker enters a treated area on the agricultural establishment during a restricted-entry interval to perform early-entry activities permitted by § 170.112 and contacts anything that has been treated with the pesticide to which the restricted-entry interval applies, including but not limited to, soil, water, or surfaces of plants, the agricultural employer shall assure that the worker has been trained.

(3) *Requirement for other agricultural workers—*(i) *Training before the 6th day of entry.* Except as provided in paragraph (a)(2) of this section, before the 6th day that a worker enters any areas on the agricultural establishment where, within the last 30 days a pesticide to which this subpart applies has been applied or a restricted-entry interval for such pesticide has been in effect, the agricultural employer shall assure that the worker has been trained.

(ii) *Exception for first 5-year period.* Until October 20, 1997, and except as provided in paragraph (a)(2) of this section, before the 16th day that a worker enters any areas on the agricultural establishment where, within the last 30 days a pesticide to which this subpart applies has been applied or a restricted-entry interval for such pesticide has been in effect, the agricultural employer shall assure that the worker has been trained. After October 20, 1997, this exception no longer applies.

(b) *Exception.* A worker who is a currently certified as an applicator of restricted-use pesticides under part 171 of this chapter or who satisfies the training requirements of part 171 of this chapter or who satisfies the handler training requirements under § 170.230(c) need not be trained under this section.

(c) *Training programs.* (1) General pesticide safety information shall be

presented to workers either orally from written materials or audiovisually. The information must be presented in a manner that the workers can understand (such as through a translator) using nontechnical terms. The presenter also shall respond to workers' questions.

(2) The person who conducts the training shall meet at least one of the following criteria:

(i) Be currently certified as an applicator of restricted-use pesticides under part 171 of this chapter; or

(ii) Be currently designated as a trainer of certified applicators or pesticide handlers by a State, Federal, or Tribal agency having jurisdiction; or

(iii) Have completed a pesticide safety train-the-trainer program approved by a State, Federal, or Tribal agency having jurisdiction; or

(iv) Satisfy the training requirements in part 171 of this chapter or in § 170.230(c).

(3) Any person who issues an EPA-approved Worker Protection Standard worker training certificate must assure that the worker who receives the training certificate has been trained in accordance with (c)(4) of this section.

(4) The training materials shall convey, at a minimum, the following information:

(i) Where and in what form pesticides may be encountered during work activities.

(ii) Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.

(iii) Routes through which pesticides can enter the body.

(iv) Signs and symptoms of common types of pesticide poisoning.

(v) Emergency first aid for pesticide injuries or poisonings.

(vi) How to obtain emergency medical care.

(vii) Routine and emergency decontamination procedures, including emergency eyeflushing techniques.

(viii) Hazards from chemigation and drift.

(ix) Hazards from pesticide residues on clothing.

(x) Warnings about taking pesticides or pesticide containers home.

(xi) Requirements of this subpart designed to reduce the risks of illness or injury resulting from workers' occupational exposure to pesticides, including application and entry restrictions, the design of the warning sign, posting of warning signs, oral warnings, the availability of specific information about applications, and the protection against retaliatory acts.

(d) *Verification of training.* (1) Except as provided in paragraph (d)(2) of this section, if the agricultural employer assures that a worker possesses an EPA-approved Worker Protection Standard worker training certificate, then the requirements of paragraph (a) of this section will have been met.

(2) If the agricultural employer is aware or has reason to know that an EPA-approved Worker Protection Standard worker training certificate has not been issued in accordance with this section, or has not been issued to the worker bearing the certificate, or the training was completed more than 5 years before the beginning of the current month, a worker's possession of that certificate does not meet the requirements of paragraph (a) of this section.

§ 170.135 Posted pesticide safety information.

(a) *Requirement.* When workers are on an agricultural establishment and, within the last 30 days, a pesticide covered by this subpart has been applied on the establishment or a restricted-entry interval has been in effect, the agricultural employer shall display, in accordance with this section, pesticide safety information.

(b) *Pesticide safety poster.* A safety poster must be displayed that conveys, at a minimum, the following basic pesticide safety concepts:

(1) Help keep pesticides from entering your body. At a minimum, the following points shall be conveyed:

(i) Avoid getting on your skin or into your body any pesticides that may be on plants and soil, in irrigation water, or drifting from nearby applications.

(ii) Wash before eating, drinking, using chewing gum or tobacco, or using the toilet.

(iii) Wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf).

(iv) Wash/shower with soap and water, shampoo hair, and put on clean clothes after work.

(v) Wash work clothes separately from other clothes before wearing them again.

(vi) Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body. As soon as possible, shower, shampoo, and change into clean clothes.

(vii) Follow directions about keeping out of treated or restricted areas.

(2) There are Federal rules to protect workers and handlers, including a requirement for safety training.

(c) *Emergency medical care information.* (1) The name, address, and telephone number of the nearest emergency medical care facility shall be on the safety poster or displayed close to the safety poster.

(2) The agricultural employer shall inform workers promptly of any change to the information on emergency medical care facilities.

(d) *Location.* (1) The information shall be displayed in a central location on the farm or in the nursery or greenhouse where it can be readily seen and read by workers.

(2) The information shall be displayed in a location in or near the forest in a place where it can be readily seen and read by workers and where workers are likely to congregate or pass by, such as at a decontamination site or an equipment storage site.

(e) *Accessibility.* Workers shall be informed of the location of the information and shall be allowed access to it.

(f) *Legibility.* The information shall remain legible during the time it is posted.

§ 170.150 Decontamination.

(a) *Requirement.* If any worker on an agricultural establishment performs any activity in an area where, within the last 30 days, a pesticide has been applied or a restricted-entry interval has been in effect and contacts anything that has been treated with the pesticide, including, but not limited to, soil, water, or surfaces of plants, the agricultural employer shall provide, in accordance with this section, a decontamination site for washing off pesticide residues.

(b) *General conditions.* (1) The agricultural employer shall provide workers with enough water for routine washing and emergency eyeflushing. At all times when the water is available to workers, the employer shall assure that it is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed.

(2) When water stored in a tank is to be used for mixing pesticides, it shall not be used for decontamination or eyeflushing, unless the tank is equipped with properly functioning valves or other mechanisms that prevent movement of pesticides into the tank.

(3) The agricultural employer shall provide soap and single-use towels at each decontamination site in quantities sufficient to meet workers' needs.

(4) To provide for emergency eyeflushing, the agricultural employer shall assure that at least 1 pint of water is immediately available to each worker who is performing early-entry activities permitted by § 170.112 and for which the pesticide labeling requires protective eyewear. The eyeflush water shall be

carried by the early-entry worker, or shall be on the vehicle the early-entry worker is using, or shall be otherwise immediately accessible.

(c) *Location.* (1) The decontamination site shall be reasonably accessible to and not more than 1/4 mile from where workers are working.

(2) For worker activities performed more than 1/4 mile from the nearest place of vehicular access:

(i) The soap, single-use towels, and water may be at the nearest place of vehicular access.

(ii) The agricultural employer may permit workers to use clean water from springs, streams, lakes, or other sources for decontamination at the remote work site, if such water is more accessible than the water at the decontamination site located at the nearest place of vehicular access.

(3) The decontamination site shall not be in an area being treated with pesticides.

(4) The decontamination site shall not be in an area that is under a restricted-entry interval, unless the workers for whom the site is provided are performing early-entry activities permitted by § 170.112 and involving contact with treated surfaces and the decontamination site would otherwise not be reasonably accessible to those workers.

(d) *Decontamination after early-entry activities.* At the end of any exposure period for workers engaged in early-entry activities permitted by § 170.112 and involving contact with anything that has been treated with the pesticide to which the restricted-entry interval applies, including, but not limited to, soil, water, air, or surfaces of plants, the agricultural employer shall provide, at the site where the workers remove personal protective equipment, soap, clean towels, and a sufficient amount of water so that the workers may wash thoroughly.

§ 170.160 Emergency assistance.

If there is reason to believe that a person who is or has been employed on an agricultural establishment to perform tasks related to the production of agricultural plants has been poisoned or injured by exposure to pesticides used on the agricultural establishment, including, but not limited to, exposures from application, splash, spill, drift, or pesticide residues, the agricultural employer shall:

(a) Make available to that person prompt transportation from the agricultural establishment, including any labor camp on the agricultural establishment, to an appropriate emergency medical facility.

(b) Provide to that person or to treating medical personnel, promptly upon request, any obtainable information on:

(1) Product name, EPA registration number, and active ingredients of any product to which that person might have been exposed.

(2) Antidote, first aid, and other medical information from the product labeling.

(3) The circumstances of application or use of the pesticide on the agricultural establishment.

(4) The circumstances of exposure of that person to the pesticide.

Subpart C—Standard for Pesticide Handlers

§ 170.202 Applicability of this subpart.

(a) *Requirement.* Except as provided by paragraph (b) of this section, this subpart applies when any pesticide is handled for use on an agricultural establishment.

(b) *Exceptions.* This subpart does not apply when any pesticide is handled for use on an agricultural establishment in the following circumstances:

(1) For mosquito abatement, Mediterranean fruit fly eradication, or similar wide-area public pest control programs sponsored by governmental entities.

(2) On livestock or other animals, or in or about animal premises.

(3) On plants grown for other than commercial or research purposes, which may include plants in habitations, home fruit and vegetable gardens, and home greenhouses.

(4) On plants that are in ornamental gardens, parks, and public or private lawns and grounds and that are intended only for aesthetic purposes or climatic modification.

(5) In a manner not directly related to the production of agricultural plants, including, but not limited to, structural pest control, control of vegetation along rights-of-way and in other noncrop areas, and pasture and rangeland use.

(6) For control of vertebrate pests.

(7) As attractants or repellents in traps.

(8) On the harvested portions of agricultural plants or on harvested timber.

(9) For research uses of unregistered pesticides.

(c) *Exemptions.* For the purposes of this subpart, owners of agricultural establishments need not assure that the protections in §§ 170.210(b) and (c), 170.222, 170.230, 170.232, 170.234, 170.235, 170.240(e) through (g), 170.250, and 170.260 are provided to themselves or to members of their immediate family who are performing handling tasks on their own agricultural establishments. However, they must provide any protections required by these sections to other handlers and other persons who are not members of their immediate family, and are encouraged to provide the protections to themselves and members of their families.

§ 170.210 Restrictions during applications.

(a) *Contact with workers and other persons.* The handler employer and the handler shall assure that no pesticide is applied so as to contact, either directly or through drift, any worker or other person, other than an appropriately trained and equipped handler.

(b) *Handlers handling highly toxic pesticides.* The handler employer shall assure that any handler who is performing any handling activity with a product that has the skull and crossbones symbol on the front panel of the label is monitored visually or by voice communication at least every 2 hours.

(c) *Fumigant applications in greenhouses.* The handler employer shall assure:

(1) That any handler who handles a fumigant in a greenhouse, including a handler who enters the greenhouse before the acceptable inhalation exposure level or ventilation criteria have been met to monitor air levels or to initiate ventilation, maintains continuous visual or voice contact with another handler.

(2) That the other handler has immediate access to the personal protective equipment required by the fumigant labeling for handlers in the event entry into the fumigated greenhouse becomes necessary for rescue.

§ 170.222 Providing specific information about applications.

When handlers (except those employed by a commercial pesticide handling establishment) are on an agricultural establishment and, within the last 30 days, a pesticide covered by this subpart has been applied on the establishment or a restricted-entry interval has been in effect, the handler employer shall display, in accordance with this section, specific information about the pesticide.

(a) *Location, accessibility, and legibility.* The information shall be displayed in the same location specified for the pesticide safety poster in § 170.235(d) of this part and shall be accessible and legible, as specified in § 170.235(e) and (f) of this part.

(b) *Timing.* (1) If warning signs are posted for the treated area before an application, the specific application information for that application shall be posted at the same time or earlier.

(2) The information shall be posted before the application takes place, if handlers (except those employed by a commercial pesticide handling establishment) will be on the establishment during application. Otherwise, the information shall be posted at the beginning of any such handler's first work period.

(3) The information shall continue to be displayed for at least 30 days after the end of the restricted-entry interval (or, if there is no restricted-entry interval, for at least 30 days after the end of the application) or at least until the handlers are no longer on the establishment, whichever is earlier.

(c) *Required information.* The information shall include:

(1) The location and description of the treated area.

(2) The product name, EPA registration number, and active ingredient(s) of the pesticide.

(3) The time and date the pesticide is to be applied.

(4) The restricted-entry interval for the pesticide.

§ 170.224 Notice of applications to agricultural employers.

Before the application of any pesticide on or in an agricultural establishment, the handler employer shall provide the following information to any agricultural employer for the establishment or shall assure that any agricultural employer is aware of:

(a) Specific location and description of the treated area.

(b) Time and date of application.

(c) Product name, EPA registration number, and active ingredient(s).

(d) Restricted-entry interval.

(e) Whether posting and oral notification are required.

(f) Any other product-specific requirements on the product labeling concerning protection of workers or other persons during or after application.

§ 170.230 Pesticide safety training.

(a) *Requirement.* Before any handler performs any handling task, the handler employer shall assure that the handler has been trained in accordance with this section during the last 5 years, counting from the end of the month in which the training was completed.

(b) *Exception.* A handler who is currently certified as an applicator of restricted-use pesticides under part 171 of this chapter or who satisfies the training requirements of part 171 of this chapter need not be trained under this section.

(c) *Training programs.* (1) General pesticide safety information shall be presented to handlers either orally from written materials or audiovisually. The information must be presented in a manner that the handlers can understand (such as through a translator). The presenter also shall respond to handlers' questions.

(2) The person who conducts the training shall meet at least one of the following criteria:

(i) Be currently certified as an applicator of restricted-use pesticides under part 171 of this chapter; or

(ii) Be currently designated as a trainer of certified applicators or pesticide handlers by a State, Federal, or Tribal agency having jurisdiction; or

(iii) Have completed a pesticide safety train-the-trainer program approved by a State, Federal, or Tribal agency having jurisdiction.

(3) Any person who issues an EPA-approved Worker Protection Standard handler training certificate must assure that the handler who receives the training certificate has been trained in accordance with paragraph (c)(4) of this section.

(4) The pesticide safety training materials must convey, at a minimum, the following information:

(i) Format and meaning of information contained on pesticide labels and in labeling, including safety information such as precautionary statements about human health hazards.

(ii) Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.

(iii) Routes by which pesticides can enter the body.

(iv) Signs and symptoms of common types of pesticide poisoning.

(v) Emergency first aid for pesticide injuries or poisonings.

(vi) How to obtain emergency medical care.

(vii) Routine and emergency decontamination procedures.

(viii) Need for and appropriate use of personal protective equipment.

(ix) Prevention, recognition, and first aid treatment of heat-related illness.

(x) Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

(xi) Environmental concerns such as drift, runoff, and wildlife hazards.

(xii) Warnings about taking pesticides or pesticide containers home.

(xiii) Requirements of this subpart that must be followed by handler employers for the protection of handlers and other persons, including the prohibition against applying pesticides in a manner that will cause contact with workers or other persons, the requirement to use personal protective equipment, the provisions for training and decontamination, and the protection against retaliatory acts.

(d) *Verification of training.* (1) Except as provided in paragraph (d)(2) of this section, if the handler employer assures that a handler possesses an EPA-approved Worker Protection Standard handler training certificate, then the requirements of paragraph (a) of this section will have been met.

(2) If the handler employer is aware or has reason to know that an EPA-approved Worker Protection Standard handler training certificate has not been issued in accordance with this section, or has not been issued to the handler bearing the certificate, or the handler training was completed more than 5 years before the beginning of the current month, a handler's possession of that certificate does not meet the requirements of paragraph (a) of this section.

§ 170.232 Knowledge of labeling and site-specific information.

(a) *Knowledge of labeling information.* (1) The handler employer shall assure that before the handler performs any handling activity, the handler either has read the product labeling or has been informed in a manner the handler can understand of all labeling requirements related to safe use of the pesticide, such as signal words, human hazard precautions, personal protective equipment requirements, first aid instructions, environmental precautions, and any additional precautions pertaining to the handling activity to be performed.

(2) The handler employer shall assure that the handler has access to the product labeling information during handling activities.

(b) *Knowledge of site-specific information.* Whenever a handler who is employed by a commercial pesticide handling establishment will be performing pesticide handling tasks on an agricultural establishment, the handler employer shall assure that the handler is aware of the following information concerning any areas on the agricultural establishment that the handler may be in (or may walk within 1/4 mile of) and that may be treated with a pesticide or that may be under a restricted-entry interval while the handler will be on the agricultural establishment:

(1) Specific location and description of any such areas; and

(2) Restrictions on entering those areas.

§ 170.234 Safe operation of equipment.

(a) The handler employer shall assure that before the handler uses any equipment for mixing, loading, transferring, or applying pesticides, the handler is instructed in the safe operation of such equipment, including, when relevant, chemigation safety requirements and drift avoidance.

(b) The handler employer shall assure that, before each day of use, equipment used for mixing, loading, transferring, or applying pesticides is inspected for leaks, clogging, and worn or damaged parts, and any damaged equipment is repaired or is replaced.

(c) Before allowing any person to repair, clean, or adjust equipment that has been used to mix, load, transfer, or apply pesticides, the handler employer shall assure that pesticide residues have been removed from the equipment, unless the person doing the cleaning, repairing, or adjusting is a handler employed by the agricultural or commercial pesticide handling establishment. If pesticide residue removal is not feasible, the handler employer shall assure that the person who repairs, cleans, or adjusts such equipment is informed:

(1) That such equipment may be contaminated with pesticides.

(2) Of the potentially harmful effects of exposure to pesticides.

(3) Of the correct way to handle such equipment.

§ 170.235 Posted pesticide safety information.

(a) *Requirement.* When handlers (except those employed by a commercial pesticide handling establishment) are on an agricultural establishment and, within the last 30 days, a pesticide covered by this subpart has been applied on the establishment or a restricted-entry interval has been in effect, the handler employer shall display, in accordance with this section, pesticide safety information.

(b) *Pesticide safety poster.* A safety poster must be displayed that conveys, at a minimum, the following basic pesticide safety concepts:

(1) Help keep pesticides from entering your body. At a minimum, the following points shall be conveyed:

(i) Avoid getting on your skin or into your body any pesticides that may be on plants and soil, in irrigation water, or drifting from nearby applications.

(ii) Wash before eating, drinking, using chewing gum or tobacco, or using the toilet.

(iii) Wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf).

(iv) Wash/shower with soap and water, shampoo hair, and put on clean clothes after work.

(v) Wash work clothes separately from other clothes before wearing them again.

(vi) Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body. As soon as possible, shower, shampoo, and change into clean clothes.

(vii) Follow directions about keeping out of treated or restricted areas.

(2) There are Federal rules to protect workers and handlers including a requirement for safety training.

(c) *Emergency medical care information.* (1) The name, address, and telephone number of the nearest emergency medical care facility shall be on the safety poster or displayed close to the safety poster.

(2) The handler employer shall inform handlers promptly of any change to the information on emergency medical care facilities.

(d) *Location.* (1) The information shall be displayed in a central location on the farm or in the nursery or greenhouse where it can be readily seen and read by handlers.

(2) The information shall be displayed in a location in or near the forest in a place where it can be readily seen and read by handlers and where handlers are likely to congregate or pass by, such as at a decontamination site or an equipment storage site.

(e) *Accessibility.* Handlers shall be informed of the location of the information and shall be allowed access to it.

(f) *Legibility.* The information shall remain legible during the time it is posted.

§ 170.240 Personal protective equipment.

(a) *Requirement.* Any person who performs tasks as a pesticide handler shall use the clothing and personal protective equipment specified on the labeling for use of the product.

(b) *Definition.* (1) Personal protective equipment (PPE) means devices and apparel that are worn to protect the body from contact with pesticides or pesticide residues, including, but not limited to, coveralls, chemical-resistant suits, chemical-resistant gloves, chemical-resistant footwear, respiratory protection devices, chemical-resistant aprons, chemical-resistant headgear, and protective eyewear.

(2) Long-sleeved shirts, short-sleeved shirts, long pants, short pants, shoes, socks, and other items of work clothing are not considered personal protective equipment for the purposes of this section and are not subject to the requirements of this section, although pesticide labeling may require that such work clothing be worn during some activities.

(c) *Provision.* When personal protective equipment is specified by the labeling of any pesticide for any handling activity, the handler employer shall provide the appropriate personal protective equipment in clean and operating condition to the handler.

(1) When "chemical-resistant" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of the pesticide being used through the material during use.

(2) When "waterproof" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of water or aqueous solutions through the material during use.

(3) When a "chemical-resistant suit" is specified by the product labeling, it shall be a loose-fitting, one- or two-piece chemical-resistant garment that covers, at a minimum, the entire body except head, hands, and feet.

(4) When "coveralls" are specified by the product labeling, they shall be a loose-fitting, one- or two-piece garment, such as a cotton or cotton and polyester coverall, that covers, at a minimum, the entire body except head, hands, and feet. The pesticide product labeling may specify that the coveralls be worn over another layer of clothing.

(5) Gloves shall be of the type specified by the product labeling. Gloves or glove linings made of leather, cotton, or other absorbent material shall not be worn for handling activities unless such materials are listed on the product labeling as acceptable for such use.

(6) When "chemical-resistant footwear" is specified by the product labeling, one of the following types of footwear must be worn:

(i) Chemical-resistant shoes.

(ii) Chemical-resistant boots.

(iii) Chemical-resistant shoe coverings worn over shoes or boots.

(7) When "protective eyewear" is specified by the product labeling, one of the following types of eyewear must be worn:

(i) Goggles.

(ii) Face shield.

(iii) Safety glasses with front, brow, and temple protection.

(iv) Full-face respirator.

(8) When a "chemical-resistant apron" is specified by the product labeling, an apron that covers the front of the body from mid-chest to the knees shall be worn.

(9) When a respirator is specified by the product labeling, it shall be appropriate for the pesticide product used and for the activity to be performed. The handler employer shall assure that the respirator fits correctly.

(10) When "chemical-resistant headgear" is specified by the product labeling, it shall be either a chemical resistant hood or a chemical-resistant hat with a wide brim.

(d) *Exceptions to personal protective equipment specified on product labeling*—(1) *Body protection.* (i) A chemical-resistant suit may be substituted for "coveralls," and any requirement for an additional layer of clothing beneath is waived.

(ii) A chemical-resistant suit may be substituted for "coveralls" and a chemical-resistant apron.

(2) *Boots.* If chemical-resistant footwear with sufficient durability and a tread appropriate for wear in rough terrain is not obtainable, then leather boots may be worn in such terrain.

(3) *Gloves.* If chemical-resistant gloves with sufficient durability and suppleness are not obtainable, then during handling activities with roses or other plants with sharp thorns, leather gloves may be worn over chemical-resistant glove liners. However, once leather gloves are worn for this use, thereafter they shall be worn only with chemical-resistant liners and they shall not be worn for any other use.

(4) *Closed systems.* If handling tasks are performed using properly functioning systems that enclose the pesticide to prevent it from contacting handlers or other persons, and if such systems are used and are maintained in accordance with that manufacturer's written operating instructions, exceptions to labeling-specified personal protective equipment for the handling activity are permitted as provided in paragraphs (d)(4)(i) and (ii) of this section.

(i) Persons using a closed system to mix or load pesticides with a signal word of DANGER or WARNING may substitute a long-sleeved shirt, long pants, shoes, socks, chemical-resistant apron, and any protective gloves specified on the labeling for handlers for the labeling-specified personal protective equipment.

(ii) Persons using a closed system to mix or load pesticides other than those in paragraph (d)(4)(i) of this section or to perform other handling tasks may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment.

(iii) Persons using a closed system that operates under pressure shall wear protective eyewear.

(iv) Persons using a closed system shall have all labeling-specified personal protective equipment immediately available for use in an emergency.

(5) *Enclosed cabs.* If handling tasks are performed from inside a cab that has a nonporous barrier which totally surrounds the occupants of the cab and prevents contact with pesticides outside of the cab, exceptions to personal protective equipment specified on the product labeling for that handling activity are permitted as provided in paragraphs (d)(5)(i) through (iv) of this section.

(i) Persons occupying an enclosed cab may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If a respiratory protection device is specified on the pesticide product labeling for the handling activity, it must be worn.

(ii) Persons occupying an enclosed cab that has a properly functioning ventilation system which is used and maintained in accordance with the manufacturer's written operating instructions and which is declared in writing by the manufacturer or by a governmental agency to provide respiratory protection equivalent to or greater than a dust/mist filtering respirator may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If a respiratory protection device other than a dust/mist-filtering respirator is specified on the pesticide product labeling, it must be worn.

(iii) Persons occupying an enclosed cab that has a properly functioning ventilation system which is used and maintained in accordance with the manufacturer's written operating instructions and which is declared in writing by the manufacturer or by a governmental agency to provide respiratory protection equivalent to or greater than the vapor- or gas-removing respirator specified on pesticide product labeling may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If an air-supplying respirator or a self-contained breathing apparatus (SCBA) is specified on the pesticide product labeling, it must be worn.

(iv) Persons occupying an enclosed cab shall have all labeling-specified personal protective equipment immediately available and stored in a chemical-resistant container, such as a plastic bag. They shall wear such personal protective equipment if it is necessary to exit the cab and contact pesticide-treated surfaces in the treated area. Once personal protective equipment is worn in the treated area, it must be removed before reentering the cab.

(6) *Aerial applications*—(i) *Use of gloves.* Chemical-resistant gloves shall be worn when entering or leaving an aircraft contaminated by pesticide residues. In the cockpit, the gloves shall be kept in an enclosed container to prevent contamination of the inside of the cockpit.

(ii) *Open cockpit.* Persons occupying an open cockpit shall use the personal protective equipment specified in the product labeling for use during application, except that chemical-resistant footwear need not be worn. A helmet may be substituted for chemical-resistant headgear. A visor may be substituted for protective eyewear.

(iii) *Enclosed cockpit.* Persons occupying an enclosed cockpit may substitute a long-sleeved shirt, long pants, shoes, and socks for labeling-specified personal protective equipment.

(7) *Crop advisors.* Crop advisors entering treated areas while a restricted-entry interval is in effect may wear the personal protective equipment specified on the pesticide labeling for early-entry activities instead of the personal protective equipment specified on the pesticide labeling for handling activities, provided:

(i) Application has been completed for at least 4 hours.

(ii) Any inhalation exposure level listed in the labeling has been reached or any ventilation criteria established by § 170.110(c)(3) or in the labeling have been met.

(e) *Use of personal protective equipment.* (1) The handler employer shall assure that personal protective equipment is used correctly for its intended purpose and is used according to the manufacturer's instructions.

(2) The handler employer shall assure that, before each day of use, all personal protective equipment is inspected for leaks, holes, tears, or worn places, and any damaged equipment is repaired or discarded.

(f) *Cleaning and maintenance.* (1) The handler employer shall assure that all personal protective equipment is cleaned according to the manufacturer's instructions or pesticide product

labeling instructions before each day of reuse. In the absence of any such instructions, it shall be washed thoroughly in detergent and hot water.

(2) If any personal protective equipment cannot be cleaned properly, the handler employer shall dispose of the personal protective equipment in accordance with any applicable Federal, State, and local regulations. Coveralls or other absorbent materials that have been drenched or heavily contaminated with an undiluted pesticide that has the signal word DANGER or WARNING on the label shall be not be reused.

(3) The handler employer shall assure that contaminated personal protective equipment is kept separately and washed separately from any other clothing or laundry.

(4) The handler employer shall assure that all clean personal protective equipment shall be either dried thoroughly before being stored or shall be put in a well ventilated place to dry.

(5) The handler employer shall assure that all personal protective equipment is stored separately from personal clothing and apart from pesticide-contaminated areas.

(6) The handler employer shall assure that when dust/mist filtering respirators are used, the filters shall be replaced:

(i) When breathing resistance becomes excessive.

(ii) When the filter element has physical damage or tears.

(iii) According to manufacturer's recommendations or pesticide product labeling, whichever is more frequent.

(iv) In the absence of any other instructions or indications of service life, at the end of each day's work period.

(7) The handler employer shall assure that when gas- or vapor-removing respirators are used, the gas- or vapor-removing canisters or cartridges shall be replaced:

(i) At the first indication of odor, taste, or irritation.

(ii) According to manufacturer's recommendations or pesticide product labeling, whichever is more frequent.

(iii) In the absence of any other instructions or indications of service life, at the end of each day's work period.

(8) The handler employer shall inform any person who cleans or launders personal protective equipment:

(i) That such equipment may be contaminated with pesticides.

(ii) Of the potentially harmful effects of exposure to pesticides.

(iii) Of the correct way(s) to clean personal protective equipment and to protect themselves when handling such equipment.

(9) The handler employer shall assure that handlers have a clean place(s) away from pesticide storage and pesticide use areas where they may:

(i) Store personal clothing not in use.

(ii) Put on personal protective equipment at the start of any exposure period.

(iii) Remove personal protective equipment at the end of any exposure period.

(10) The handler employer shall not allow or direct any handler to wear home or to take home personal protective equipment contaminated with pesticides.

(g) *Heat-related illness.* When the use of personal protective equipment is specified by the labeling of any pesticide for the handling activity, the handler employer shall assure that no handler is allowed or directed to perform the handling activity unless appropriate measures are taken, if necessary, to prevent heat-related illness.

§ 170.250 Decontamination.

(a) *Requirement.* During any handling activity, the handler employer shall provide for handlers, in accordance with this section, a decontamination site for washing off pesticides and pesticide residues.

(b) *General conditions.* (1) The handler employer shall provide handlers with enough water for routine washing, for emergency eyeflushing, and for washing the entire body in case of an emergency. At all times when the water is available to handlers, the handler employer shall assure that it is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed.

(2) When water stored in a tank is to be used for mixing pesticides, it shall not be used for decontamination or eye flushing, unless the tank is equipped with properly functioning valves or other mechanisms that prevent movement of pesticides into the tank.

(3) The handler employer shall provide soap and single-use towels at each decontamination site in quantities sufficient to meet handlers' needs.

(4) The handler employer shall provide one clean change of clothing, such as coveralls, at each decontamination site for use in an emergency.

(c) *Location.* The decontamination site shall be reasonably accessible to and not more than 1/4 mile from each handler during the handling activity.

(1) *Exception for mixing sites.* For mixing activities, the decontamination site shall be at the mixing site.

(2) *Exception for pilots.* The decontamination site for a pilot who is applying pesticides aerially shall be in the airplane or at the aircraft's loading site.

(3) *Exception for handling pesticides in remote areas.* When handling activities are performed more than 1/4 mile from the nearest place of vehicular access:

(i) The soap, single-use towels, clean change of clothing, and water may be at the nearest place of vehicular access.

(ii) The handler employer may permit handlers to use clean water from springs, streams, lakes, or other sources for decontamination at the remote work site, if such water is more accessible than the water at the decontamination site located at the nearest place of vehicular access.

(4) *Decontamination site in treated areas.* The decontamination site shall not be in an area being treated with pesticides or in an area under a restricted-entry interval, unless:

(i) The decontamination site is in the area where the handler is performing handling activities;

(ii) The soap, single-use towels, and clean change of clothing are in enclosed containers; and

(iii) The water is running tap water or is enclosed in a container.

(d) *Emergency eyeflushing.* To provide for emergency eyeflushing, the handler employer shall assure that at least 1 pint of water is immediately available to each handler who is performing tasks for which the pesticide labeling requires protective eyewear. The eyeflush water shall be carried by the handler, or shall be on the vehicle or aircraft the handler is using, or shall be otherwise immediately accessible.

(e) *Decontamination after handling activities.* At the end of any exposure period, the handler employer shall provide at the site where handlers remove personal protective equipment, soap, clean towels, and a sufficient amount of water so that the handlers may wash thoroughly.

§ 170.260 Emergency assistance.

If there is reason to believe that a person who is or has been employed by an agricultural establishment or commercial pesticide handling establishment to perform pesticide handling tasks has been poisoned or injured by exposure to pesticides as a result of that employment, including, but not limited to, exposures from handling tasks or from application, splash, spill, drift, or pesticide residues, the handler employer shall:

(a) Make available to that person prompt transportation from the place of employment or the handling site to an appropriate emergency medical facility.

(b) Provide to that person or to treating medical personnel, promptly upon request, any obtainable information on:

(1) Product name, EPA registration number, and active ingredients of any product to which that person might have been exposed.

(2) Antidote, first aid, and other medical information from the product labeling.

(3) The circumstances of handling of the pesticide.

(4) The circumstances of exposure of that person to the pesticide.

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